# ROMAN ECONOMIC POLICY
# IN THE
# ERYTHRA THALASSA
# 30 B.C.–A.D. 217

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SUPPLEMENTUM NONAGESIMUM PRIMUM

STEVEN E. SIDEBOTHAM

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LUGDUNI BATAVORUM E. J. BRILL MCMLXXXVI

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BY

STEVEN E. SIDEBOTHAM

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# PREFACE

This book is a revised version of my Ph.D. dissertation completed at the University of Michigan in 1981. There are no basic changes in the conclusions I reached in the dissertation and those I present in the book. However, a number of scholars who read the dissertation with an eye to eventual publication have pointed out errors and omissions and have made suggestions to improve the work. Many, but not all, of these I have incorporated into the book.

Prof. J. W. Eadie, my original dissertation advisor, commented upon chapter five. Prof. A. K. Narain and Dr. Peter Granda remarked upon the entire manuscript, but were especially helpful on the Indian sections of my work. Prof. G. W. Bowersock, Dr. W. W. Müller and Dr. Gus Van Beek had many useful observations and provided bibliography on the Arabia sections of the manuscript as did Profs. M. L. Ingraham and H. I. MacAdam. Profs. P. J. Sijpesteijn and R. S. Bagnall commented upon the entire manuscript and were especially helpful with suggestions on the Egyptian sections. To all of these people and the anonymous reader for E. J. Brill I offer my sincere appreciation.

I also wish to thank University College London for providing the photograph of the *Petrie Ostracon*. The Caesarea Ancient Harbour Excavation Project, Mr. R. Reinhold of *The New York Times*, Dr. David F. Graf, Prof. M. L. Ingraham (and Dr. F. V. Winnett) and Prof. J. H. Johnson also kindly supplied photographs.

The College of Arts and Science of the University of Delaware provided a grant-in-aid which helped defray costs of typing and reproduction of photographs. The Provost of the University of Delaware generously provided a subvention to help cover publication costs.

In dealing with a topic of such broad geographical and chronological scope I am bound to have missed some important bibliography. Several works came to my attention too late for incorporation into my own. These include: a master's thesis by Mr. David J. Johnson for the Department of Anthropology, University of Utah, June 1981 entitled *The Nabataean Incense Trade, The Case for State Control and Production;* K.D. White, *Greek and Roman Technology* (Ithaca, NY: Cornell University Press, 1984) for its sections on ships and water transport; F. Millar and E. Segal, eds., *Caesar Augustus Seven Aspects* (Oxford: Clarendon Press, 1984); J. F. Matthews, "The Tax Law of Palmyra: Evidence for Economic History in a City of the Roman East," *JRS* 74 (1984): 157–180 would have been useful in my chapters four and five. My editor, Mr. Julian Deahl, kindly brought to my attention and translated from the Dutch an article by Prof. P. J. Sijpesteijn, "Egypte, Schakel in Romes handel met India,"

*Spieghel Historiael*, Jan. 1985: 8–15. Sijpesteijn in this article publishes a photograph and translation of the Vienna Papyrus (*P. Vindob. G.* 40822) and borrows many of my observations regarding Roman trade with Arabia and India. J. B. Campbell, *The Emperor and the Roman Army 31 B.C.–A.D. 235* (Oxford: Clarendon Press, 1984), 343–345 makes some interesting observations on the issue of an *eques* as Roman governor of Egypt. Much has been published about the excavations at Caesarea Maritima since I completed the manuscript. The latest comprehensive analysis of recent excavations there is J. P. Oleson, et al., "The Caesarea Ancient Harbor Excavation Project (C.A.H.E.P.): Preliminary Report on the 1980–1983 Seasons," *Journal of Field Archaeology* 11 (1984): 281–305. Work in Egypt's Eastern Desert also continues: L. Bell, J. H. Johnson and D. Whitcomb, "The Eastern Desert of Upper Egypt: Routes and Inscriptions," *JNES* 43,1 (1984): 27–46; see also R. Lambert, *Beloved and God* (London: Weidenfeld and Nicolson, 1984): 198–208 for more on the Nile emporium of Antinoopolis.

There are undoubtedly other works unknown to me which would have been useful. For such oversights I apologize.

I would like to thank Mary Beth Gayhardt and Carol Maltenfort for undertaking the arduous task of preparing the index.

Last, but not least, I wish to express thanks to my wife Marla and to my parents Thomas and Jean for their support and encouragement while writing this book.

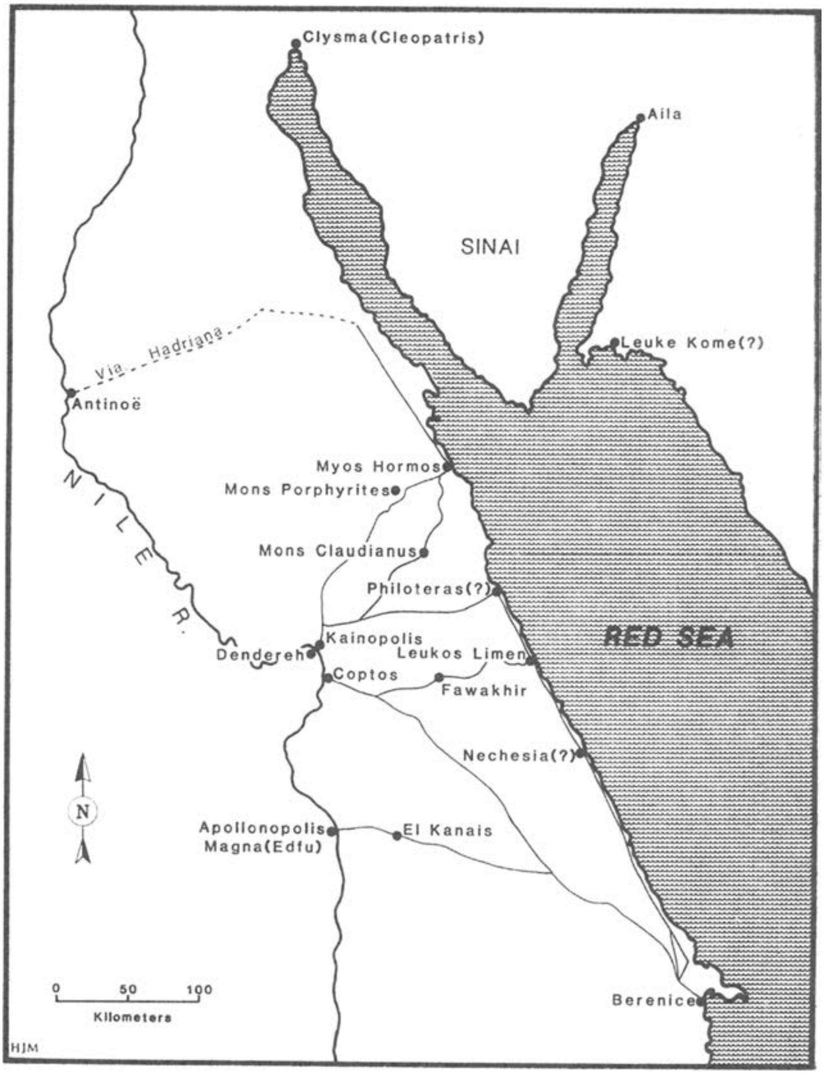
Newark, Delaware,
U.S.A. December 1985

## ABBREVIATIONS

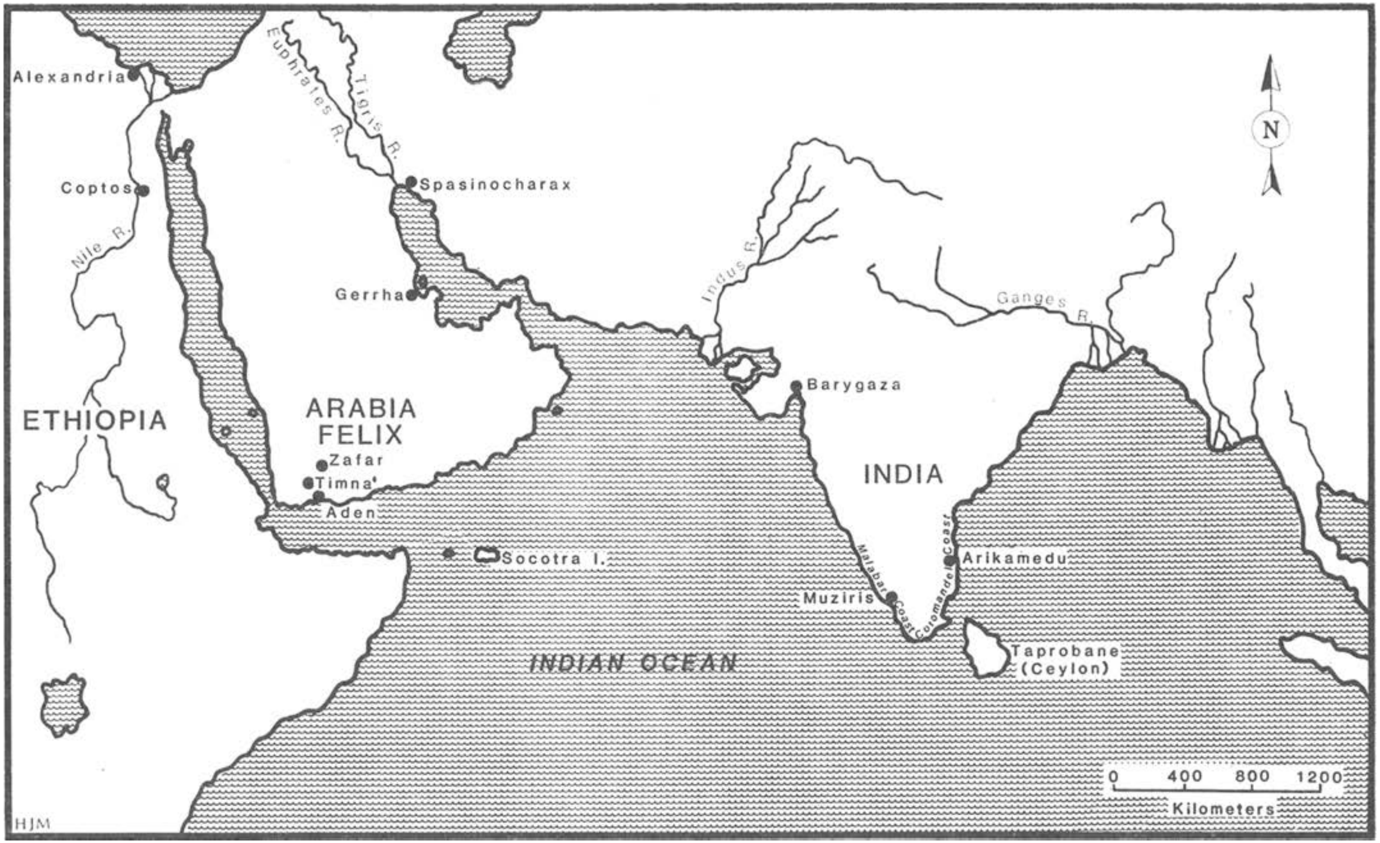
| | |
|---|---|
| *ADAJ* | *Annual of the Department of Antiquities of Jordan.* |
| *AE* | *L'Année epigraphique.* |
| *AEHE* | *Annuaire de l'École pratique des hautes études.* |
| *AESC* | *Annales Économies, Sociétés, Civilisations.* |
| *AHR* | *The American Historical Review.* |
| *AJA* | *American Journal of Archaeology.* |
| *AJP* | *American Journal of Philology.* |
| *ANRW* | *Aufstieg und Niedergang der römischen Welt.* |
| *ANSMN* | *American Numismatic Society Museum Notes.* |
| *ARCE* | *American Research Center in Egypt.* |
| *Archiv* | *Archiv für Papyrusforschung verwandte Gebiete.* |
| *ASAE* | *Annales du service des antiquités d'Égypte.* |
| *ASP* | *American Society of Papyrologists.* |
| *BA* | *Biblical Archaeologist.* |
| *BASOR* | *Bulletin of the American Schools of Oriental Research.* |
| *BASP* | *Bulletin of the American Society of Papyrologists.* |
| *BCH* | *Bulletin de correspondance hellénique.* |
| *BIAUL* | *Bulletin of the Institute of Archaeology, University of London.* |
| *BIFAO* | *Bulletin de l'Institut français d'archéologie orientale.* |
| *BJ* | *Bonner Jahrbücher.* |
| *BSFFA* | *Bulletin de la Société français de fouilles archéologiques.* |
| *BSOAS* | *Bulletin of the Schools of Oriental and African Studies, University of London.* |
| *BSRAA* | *Bulletin de la Société royale d'archéologie d'Alexandrie.* |
| *BSRGE* | *Bulletin de la Société royale de géographie d'Égypte.* |
| *CAH* | *Cambridge Ancient History* (Cambridge: Cambridge University Press), eds., S. A. Cook, *et al.* |
| *CE* | *Chronique d'Égypte.* |
| *CHJ* | *The Ceylon Historical Journal.* |
| *CIG* | *Corpus Inscriptionum Graecarum*, ed. A. Boeckh (Berlin: G. Reimerum, 1828-1877). |
| *CIL* | *Corpus Inscriptionum Latinarum*, eds., T. Mommsen, *et al.* (Berlin: G. Reimerum, 1862-). |
| *CIS* | *Corpus Inscriptionum Semiticarum* (Paris: E. Reipublicae Typographia, 1881-). |
| *CP* | *Classical Philology.* |
| *CQ* | *Classical Quarterly.* |
| *CRAI* | *Comptes-rendus de l'Académie des inscriptions et belles-lettres.* |
| *CW* | *Classical World.* |
| *EHR* | *The Economic History Review.* |
| *Eph. Epig.* | *Ephemeris Epigraphica, Corpus Inscriptionum Latinarum Supplementum* (Berlin: Institutus archaeologici romani, 1872-). |
| *ESAR* | *An Economic Survey of Ancient Rome*, ed. T. Frank, 2nd ed., (Paterson, NJ: Pageant Books, 1959). |
| *GJ* | *Geographical Journal.* |
| *G&R* | *Greece and Rome.* |
| *GRBS* | *Greek, Roman and Byzantine Studies.* |
| *HSCP* | *Harvard Studies in Classical Philology.* |
| *IEJ* | *Israel Exploration Journal.* |
| *IFAO* | *Institut français d'archéologie orientale.* |

| | |
|---|---|
| *IG* | *Inscriptiones Graecae Siciliae et Italiae additis Graecis Galliae, Hispaniae, Britanniae, Germaniae Inscriptionibus*, ed. G. Kaibel (Berlin: G. Reimerum, 1890). |
| *IGRR* | *Inscriptiones graecae ad res romanas pertinentes*, ed. R. Cagnat, *et al.* (Paris: E. Leroux, 1901-). |
| *ILS* | *Inscriptiones Latinae Selectae*, ed. H. Dessau (Berlin: Weidmann, 1882-1906 and 1954-1955). |
| *JAH* | *Journal of Asian History.* |
| *JAOS* | *Journal of the American Oriental Society.* |
| *JARCE* | *Journal of the American Research Center in Egypt.* |
| *JEA* | *The Journal of Egyptian Archaeology.* |
| *JEBH* | *Journal of Economic and Business History.* |
| *JHS* | *Journal of Hellenic Studies.* |
| *JIH* | *Journal of Indian History.* |
| *JJP* | *The Journal of Juristic Papyrology.* |
| *JNES* | *Journal of Near East Studies.* |
| *JNSI* | *Journal of the Numismatic Society of India.* |
| *JRAS* | *Journal of the Royal Asiatic Society of Great Britain and Ireland.* |
| *JRS* | *Journal of Roman Studies.* |
| *JTG* | *The Journal of Tropical Geography.* |
| *JWG* | *Jahrbuch für Wirtschaftgeschichte.* |
| *MDAI* | *Mitteilungen des Deutschen Archäologischen Instituts.* |
| *MIFAO* | *Mémoires de l'Institut français d'archéologie orientale.* |
| *NC* | *Numismatic Chronicle.* |
| *O. Br. Berl.* | *Ostraka aus Brüssel und Berlin*, ed. P. Viereck (Berlin-Leipzig: Vereinigung Wissenschaftlichen Verleger, 1922). |
| *OGIS* | *Orientis Graeci Inscriptiones Selectae*, ed. W. Dittenberger (Leipzig: S. Hirzel, 1903-1905). |
| *O. Strass.* | *Griechische und griechisch-demotische Ostraka der Universitäts- und Landesbibliothek zu Strassburg im Elsass*, ed. P. Viereck (Berlin: Weidmann, 1923). |
| *O. Petr.* | J. G. Tait, *Greek Ostraca in the Bodleian Library at Oxford and Various Other Collections*, vol. 1 (London: Egypt Exploration Society, 1930). |
| *P. Bodl. 60* | U. Wilcken, "Ein NOMOC ΤΕΛΩΝΙΚΟC aus der Kaiserzeit," *Archiv* 3 (1904): 185-200. |
| *PBSR* | *Papers of the British School at Rome.* |
| *P. Cairo Zenon* | *Zenon Papyri*, 4 vols. *(Catalogue général des Antiquités égyptiennes du Musée du Caire)*, ed. C. C. Edgar (Cairo: IFAO, 1925-1931). |
| *PEQ* | *Palestine Exploration Quarterly.* |
| *Periplus* | *Periplus Maris Erythraei.* |
| *P. Fay.* | *Fayûm Towns and their Papyri*, eds. B. P. Grenfell and A. S. Hunt, *et al.* (London: Egyptian Exploration Fund, 1900). |
| *P. Giess.* | *Griechische Papyri im Museum des Oberhessischen Geschichtsvereins zu Giessen*, eds. O. Eger, E. Kornemann, *et al.* (Leipzig: B. G. Teubner, 1910-1912). |
| *P. Hamb.* | *Griechische Papyrusurkunden der Hamburger Stadtbibliothek* (Staats- und Universitätsbibliothek), ed. P. M. Meyer (Leipzig: B. G. Teubner, 1911-1924). |
| *PIR* | *Prosopographia Imperii Romani*, eds. H. Dessau, *et al.*, (Berlin: G. Reimerum, 1897-1898 and 1933). |
| *P. Lond.* | *Greek Papyri in the British Museum*, eds., F. G. Kenyon, *et al.* (London: British Museum, 1893-). |
| *PME* | *Periplus Maris Erythraei.* |
| *P. Oxy.* | *Oxyrhynchus Papyri*, eds., B. P. Grenfell and A. S. Hunt, *et al.*, (London: Egypt Exploration Fund, 1898-). |

| | |
|---|---|
| *P. Ryl.* | *Catalogue of the Greek Papyri in the John Rylands Library, Manchester*, eds., A. S. Hunt, *et al.*, (Manchester: University Press, 1911-1952). |
| *PSI* | *Papiri greci e latini (Publicazioni della Societa italiana per la ricerca dei Papiri greci e latini in Egitto)* (Florence: Topographia E. Ariani, 1912). |
| *P. Taur.* | *Papyri Graeci Regii Taurinensis Musei Aegypti*, ed., V. A. Peyron (Torino: Topographia Regia, 1826). |
| *P. Teb.* | *Tebtunis Papyri*, ed. B. P. Grenfell, *et al.*, (London-New York: H. Frowde, 1902-). |
| *PW* | *Paulys Realencyclopädie der classischen Altertumswissenschaften*, eds. G. Wissowa, *et al.*, (Stuttgart: J. B. Metzler, 1894-). |
| *RAAN* | *Rendiconti dell'Accademia di archeologia, lettere e belle arti di Napoli.* |
| *RB* | *Revue Biblique.* |
| *REL* | *Revue des études latines.* |
| *RES* | *Repertoire d'épigraphie semitique*, eds. Ch. Clermont-Ganneau, *et al.*, (Paris: Imprimerie nationale, 1900-). |
| *RIDA* | *Revue internationale des droits de l'antiquité.* |
| *SB* | *Sammelbuch griechischer Urkunden aus Ägypten*, ed. F. Preisigke (Strassburg-Berlin-Leipzig: K. J. Trübner, 1915-). |
| *SDB* | *Supplement au Dictionnaire de la Bible* (Paris: Letouzey & Ané, 1926-). |
| *SEG* | *Supplementum Epigraphicum Graecum*, eds. H. W. Pleket, *et al.*, (Alphen aan den Rijn: Sijthoff & Noordhof, 1923-). |
| *SEHHW* | M. I. Rostovtzeff, *The Social and Economic History of the Hellenistic World* (Oxford: Clarendon Press, 1941 and 1953). |
| *SEHRE* | M. I. Rostovtzeff, *The Social and Economic History of the Roman Empire*, 2nd ed. (Oxford: Clarendon Press, 1957). |
| *SIG* | *Sylloge Inscriptionum Graecarum*, ed. W. Dittenberger (Leipzig: S. Hirzel, 1898-1901 and 1915-1924). |
| *TAPA* | *Transactions (and Proceedings) of the American Philological Association.* |
| *WO.* | *Griechische Ostraka aus Aegypten und Nubien*, ed. U. Wilcken (Leipzig-Berlin: Gieske & Devrient, 1899). |
| *ZDPV* | *Zeitschrift des Deutschen Palästina-Vereins.* |
| *ZPE* | *Zeitschrift für Papyrologie und Epigraphik.* |




Map 1: The Eastern Desert and the Egyptian littoral of the Red Sea




Map 2: The Indian Ocean in Imperial times

Map 3: The Red Sea at the time of the Roman Empire

## CHAPTER ONE

# INTRODUCTION

There have been a number of studies of the commerce between the Roman empire and other Erythraean Sea states in South Arabia and South India. The designations Erythra Thalassa—Erythraean Sea—and Rubrum Mare appear frequently in the ancient sources, but rarely is it clear to which body of water they refer. This imprecision has led translators to render the terms carelessly. The common translation is simply Red Sea. However, it is clear that the terms could refer equally to the Persian Gulf, the Indian Ocean or the Red Sea as we call it today. We will use the terms Erythra Thalassa and Erythraean Sea to signify, inclusively, the Red Sea, Indian Ocean and Persian Gulf (see Appendix A).

In the past scholars investigating Rome's Erythraean Sea trade have focused upon the items traded, the trade routes and the volume and cost of the commerce. However, little attention has been paid to the true nature of Rome's Erythraean Sea commerce and there has been no study of the imperial government's regulation, taxation and facilitation of this commerce. Using archaeological (papyri, inscriptions, ceramics, coins, architecture, etc.) and literary evidence we investigate the Roman imperial government's policy in the region of the Erythraean Sea. In order to discern policy in the region we must study a period of several centuries. The era 30 B.C. to A.D. 217—from the annexation of Egypt by Augustus to the death of Caracalla, the best documented period of Roman involvement in the region of the Erythraean Sea—was one of extensive Roman commercial, diplomatic and military activity in the Erythra Thalassa. This investigation assesses Roman policy in the region and determines the consistency with which it was executed by successive emperors. Our study encompasses the southeastern provinces of the Roman empire and the client states and sovereign powers beyond Rome's boundaries. Egypt, Judaea, Nabataea/Provincia Arabia and Syria figure prominently in this assessment because the bulk of Rome's overland and maritime commerce with other Erythraean Sea lands passed through these regions. Of even greater importance were the trading partners beyond the boundaries of the empire with whom Roman merchants established commercial ties. Roman maritime trade with the kingdoms of South Arabia and South India developed rapidly because the Ptolemies had built a number of ports on the Egyptian Red Sea coast which facilitated commerce. The Ptolemies also established an administrative and toll collection apparatus to deal with Erythraean Sea commerce. While this apparatus may have been functionally different from that later developed by the Romans,[1] both the

[1] N. Lewis (1970): 5ff. See also J. D. Thomas (1982): 12-13 and n. 11.

Ptolemies and the Romans had one goal in common: both sought to enrich the state by levying duties, tolls etc., but left the actual trade to private entrepreneurs who, themselves, bore the financial risks of hazardous voyages to South Arabia and India.

## *The Erythraean Sea Trade of the Ptolemies*

After the death of Alexander the Great and the breakup of his empire in 323 B.C. Alexander's general Ptolemy took control of Egypt. We know little of Ptolemy I Soter's (323-283/282 B.C.) commercial activities in the Red Sea region. Given Soter's preoccupation with wars in Syria against the Seleucids and his efforts to consolidate his hold on Egypt it is unlikely that he devoted much attention to the development of commerce in the Red Sea. Nevertheless we know from the contemporary writer Theophrastus (370-*c.* 285 B.C.) and from a number of extant papyri that there was direct contact between Egypt and the kingdoms of South Arabia and indirect contact, via South Arabian and perhaps Nabataean Arab middlemen, between Egypt and India in the late fourth-early third century B.C. Theophrastus gives extensive descriptions of many imported plants and aromatics like cotton, rice, Indian barley, pepper, frankincense, myrrh, balsam, cassia, and cinnamon. He has left us a detailed account not only of the properties of myrrh, but also lengthy descriptions of the myrrh tree itself.[2] Nevertheless, Theophrastus was not accurate in his description of the origins of at least one of these products. He thought that cinnamon was cultivated in Arabia,[3] but it most surely came from India. Others in the Ptolemaic period also had misconceptions of the origins of some of the the imported wares. One Apollon making a dedication for the safe return of his father—from a journey perhaps—at the Pan temple at El-Kanais on the Edfu-Berenice road offered "Indian" myrrh and incense to Pan and Apollo.[4] Myrrh, of course, came from Arabia, not India. Such errors suggest that the Ptolemies were only in indirect contact with India and kept misinformed, perhaps deliberately, by the South Arabians as to the products of both South Arabia and South India so as to protect the latter's position as middlemen in the South India-South Arabia-Egypt trade.

Much of our slight knowledge of Ptolemaic regulation of Erythraean Sea commerce derives from the reign of Ptolemy II Philadelphus (283/282-246 B.C.). He promoted Ptolemaic commercial activity in the Red Sea by construct-

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[2] Theophrastus, *Enquiry into Plants* 4.4.8; 4.4.10; 4.4.14 on cotton, rice, frankincense, myrrh, cassia, balsam and cinnamon; 8.4.2 on Indian barley; 9.20.1 on pepper; on descriptions of the frankincense and myrrh trees 9.4.1-10; on the properties of myrrh see *Concerning Odors* 32. For other references to Indians in Ptolemaic papyri see O. Stein (1929): 35.

[3] *Enquiry into Plants* 9.4.2.

[4] A. Bernand (1972b):145-147, no. 72.

ing ports at Arsinoë (Clysma-Suez), Myos Hormos, Philoteras and Berenice Trogodytica in Egypt.[5] Under Philadelphus these ports were connected to Coptos and Apollonopolis Magna (Edfu) on the Nile by roads under military protection and supplied with water points (*hydreumata*).[6] The military undoubtedly monitored the trade passing along the roads. There was also a maritime police corps which protected merchants from pirates.[7] Philadelphus and his immediate successors Ptolemy III Euergetes (246-221 B.C.) and Ptolemy IV Philopator (221-205 B.C.) also founded fifteen or sixteen ports on the west coast of the Red Sea as far south as the Bab el-Mandeb.[8] Ptolemy II followed in the footsteps of Necho, Darius and perhaps other earlier rulers of Egypt by constructing a canal between the Nile and the Red Sea port of Clysma which facilitated trade between that port and Alexandria.[9]

Either Philadelphus or Ptolemy III founded a colony jointly with the Milesians at Ampelone on the west coast of Arabia. We do not know the location of Ampelone, but perhaps it was later the site of Leuke Kome, this new harbor superseding the older port of Egra to the South.[10] However, Egra still seems to have been active late in the first century B.C. for Strabo mentions (16.4.24) that Aelius Gallus embarked his army there for the return voyage to Egypt in 25 B.C. The Ptolemaic foundation of a port on the west coast of Arabia undoubtedly facilitated trade with South Arabia and was, most likely, an attempt by the Ptolemies to share the profits enjoyed by the Nabataean and South Arab middlemen. The successors of Philadelphus continued to found ports on the Red Sea coast. At some unknown date a Berenice was founded in the Gulf of Aqaba and a port was established at Nechesia on the Egyptian Red Sea coast.[11] Although at least one modern scholar contends that there was a Ptolemaic port at Leukos Limen on the Egyptian Red Sea coast, archaeological excavations at Quseir al-Qadim (Leukos Limen) in 1978, 1980 and 1982 unearthed Roman and Islamic artifacts; the only Ptolemaic find was a single worn bronze coin of

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[5] On Arsinoë and Myos Hormos see H. Kortenbeutel (1931):25-26; C. Bourdon (1925):59, 67; M. I. Rostovtzeff (1932b):742; W. W. Tarn (1929):22; Cl. Préaux (1952):270-271; for Philoteras Strabo 16.4.5; G. W. Murray (1967):26; for Berenice Trogodytica see Strabo 17.1.45ff; Pliny, *NH* 6.33.167; Kortenbeutel (1931):26; Tarn (1929):22; Préaux (1952): 270-271; D. Meredith (1957):56-70.

[6] Bernand (1972b):46-54, no. 10; R. S. Bagnall (1976b):35.

[7] J. H. Thiel (1967):32; *OGIS* I.132 of 130 B.C.

[8] Strabo 16.4.7ff; Pliny, *NH* 6.34.170-175; Kortenbeutel (1931):26; Rostovtzeff (1932b): 742; H. H. Scullard (1974):129, fig. 13; M. I. Rostovtzeff, *SEHHW*:384; F. Oertel (1964):43.

[9] Tarn (1929):9; Kortenbeutel (1931):19; Oertel (1964):23, 29, 43-44; Bourdon (1925):14, 47, 59; Rostovtzeff (1932b):742; E. Leider (1934):51; P. J. Sijpesteijn (1963):71; B. Bruyère (1966):11; Thiel (1967):7, 10; G. Posener (1938):258-273; E. Naville (1902-1903):71-73.

[10] Pliny, *NH* 6.32.158-159; Tarn (1929):21-22 and n. 2; Leider (1934):51; Kortenbeutel (1931):21.

[11] Josephus, *AJ* 8.163 and Pomponius Mela 3.80; Rostovtzeff, (1932b):742; *PW* 3, col. 280 and *PW* 16, col. 2167.

Ptolemy III. This coin by itself does not prove a Ptolemaic foundation date for the port which seems to have been founded in the first century A.D.[12]

The Red Sea ports were founded primarily to facilitate the acquisition of gold, ivory and to secure the import of elephants from "Ethiopia"[13] to counter the Indian elephants of the Seleucids. Hellenistic armies considered elephants to be valuable assets and despite the mixed results achieved by their use in battle, no military machine was deemed complete without its complement of these animals.

The apparent wane in interest in gathering elephants from abroad by the reign of Ptolemy V Epiphanes (c. 205-180 B.C.)[14] has several possible explanations. We might argue that the Ptolemies no longer imported elephants because the Seleucids, their greatest rivals, were cut off from their source of elephants in India by the rise of Parthia in the second half of the third century B.C.[15] Because their rivals lacked these beasts, the Ptolemies may not have felt compelled to continue to import them either. Yet if elephants were such great military assets, we would surmise that the Ptolemies would want to continue their importation to maintain a military superiority over their "elephantless" Syrian competitors. It is more likely that the Ptolemaic import of elephants declined for another reason. Although the Ptolemies had gathered elephants from "Ethiopia" at least since Ptolemy II, it was only under Ptolemy IV that more organization was introduced into the elephant gathering process.[16] Together with existing ones in captivity, the increased flow of elephants from "Ethiopia" under Ptolemy IV undoubtedly led to the presence of large numbers of these beasts in Egypt. Most likely the herd built up by Ptolemy IV was so large, and the breeding of elephants in captivity so regular, that the Ptolemies no longer needed to import them at great expense; they had their own domestic supply. Nevertheless, Ptolemaic interest in the Red Sea persisted.

Ptolemaic trade in other commodities soon developed, under Ptolemy II, between Egypt and other Erythraean Sea lands. Ptolemaic Egypt imported many of the same products from Arabia and Africa as did the Romans. A Minaean inscription on a sarcophagus from Giza or perhaps the Fayum in Egypt attests direct commercial contact with South Arabia sometime in the Ptolemaic

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[12] S. Sidebotham (1986):Forthcoming; see Préaux (1952):273; G. W. Murray (1925):142; A. E. P. Weigall (1909):60 believes that Leukos Limen (Quseir) was a Ptolemaic foundation; M. J. Couyat (1910a):533.

[13] Murray (1967):25-27; for Ptolemy II's elephant hunts see *OGIS* I.54; for more on Ptolemaic elephant hunts see *PME* 3; for hunts under Ptolemy IV see *OGIS* 1.82 and 86; see also F. E. Adcock (1962):54-56; Y. Garlan (1975):118 and M. I. Rostovtzeff (1907-1908):301-304 on the importance of elephants in warfare; more recently see G. W. B. Huntingford (1980): 166-172.

[14] Rostovtzeff (1907-1908):304.

[15] Scullard (1974):135.

[16] Diodorus Siculus 3.36.3ff; Scullard (1974):124, 136; P. M. Fraser (1972):179.

period. The sarcophagus inscription documents the import of myrrh and calamus perfumes for use in the Egyptian temples.[17] Ptolemaic papyri also record the import of frankincense, myrrh, calamus, saffron, cassia, cinnamon and textiles from South Arabia.[18] In 260-259 B.C. Zenon, the agent of Apollonius in Palestine, bought products carried from South Arabia by Nabataean caravans.[19]

In the Ptolemaic period private merchants engaged in the Erythraean Sea commerce. In fact we know that one Arkhippos, in about 150 B.C., made an interest-free loan—we do not know the amount—to five private traders, several of them non-Egyptians, in order that they could sail to Punt on the East African coast to secure some unnamed cargo, no doubt aromatics. That the loan was interest free indicates that Arkhippos was not solely a creditor, but also participated financially in the commerce at hand.[20] However, the customary interest on such risky loans of capital to entrepreneurs engaged in hazardous navigation of the Red Sea and Indian Ocean seems to have been high—perhaps as much as 24%.[21] When Erythraean Sea wares arrived in Egypt many had to be sold to the government at fixed prices. P. Tebtunis 35 of about 111 B.C. suggests that the Ptolemaic government enjoyed a monopoly on myrrh. In the first century B.C. there is also some evidence for a Ptolemaic monopoly on perfume—which could be farmed out to private persons by the government—many of the ingredients of which (myrrh, cinnamon, cassia) arrived from Arabia and India.[22] The Revenue Laws of Ptolemy II of 259 B.C. indicate that the government farmed out many of the taxes and monopolies to private tax farmers and businessmen rather than undertake their exploitation itself.[23] The story of the repeated confiscation by the Ptolemies of the cargoes that Eudoxus of Cyzicus brought from India would suggest that such commodities were considered part of this monopoly system. Alternatively, Eudoxus' voyage was sponsored directly by the crown which was merely claiming its rightful property.[24] We know little of Ptolemaic tax-collecting procedures at points through which Erythraean Sea wares passed, but duties collected on Erythraean Sea wares carried on Arabian caravans seem to have been sub-

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[17] Ch. Clermont-Ganneau (1908):557-558; A. F. L. Beeston (1937):61-62; Rostovtzeff, *SEHHW*, 307.

[18] *P. Cairo Zenon* 59536; 59176; *PSI* 328; 628; *P. Teb.* I.190; 250; Rostovtzeff, *SEHHW*, 313; M. G. Raschke (1975):241-246; A. E. Hanson (1972):161-166; P. Collart, P. Jouguet (1925):110-121; P. M. Fraser (1972):141. For a trip to Saba recorded at the Paneion of el Kanaïs on the Edfu-Berenice road in the Ptolemaic period see Bernand (1972b):36.

[19] Rostovtzeff, *SEHHW*:350 and n. 134.

[20] Cl. Préaux (1979):364 and n. 4; Cl. Préaux (1978):377-378; U. Wilcken (1925):92-94, 100; A. Wilhelm (1937):148-150.

[21] R. Bogaert (1965):148.

[22] See Theophrastus, *Concerning Odors* 34 and T. C. Skeat (1966):179-180.

[23] J. Bingen (1978b):8ff.

[24] Thiel (1967):19-21.

stantial—25-50% *ad valorem*.[25] The Ptolemies usually farmed the collection of taxes inside their empire, and though evidence is lacking, the duties and tolls collected on imported Erythraean Sea wares may also have been farmed out to private individuals by the Ptolemaic government.[26] In this way the government was assured of a steady income from the tax farmers who, themselves, bore the financial risk—apparently deemed worthwhile by them—inherent in toll collecting at the kingdom's borders.

When special cargoes from abroad arrived the government or its agents stored them in warehouses in Alexandria and converted many of the imported raw materials into finished wares for resale at a profit through licensed retail merchants.[27] There may even have been attempts to acclimatize an Arabian breed of sheep,[28] but the fact that the breed was called "Arabian" does not necessarily mean that this species came from South Arabia. The discovery of Ptolemaic statues or statues copying Ptolemaic motifs at Timna' in South Arabia[29] suggests that Ptolemaic artisans either produced *objets d'art* for a South Arabian market or, alternatively, worked in South Arabia for wealthy South Arabian patrons. In sum, the papyri, literary and archaeological evidence suggest that there was direct commercial and perhaps artistic contact between Ptolemaic Egypt and South Arabia from the late fourth-early third century B.C. on.

Ptolemaic commercial activity in the Red Sea was not without its hazards. The Nabataeans seem to have preyed on Ptolemaic shipping in the Red Sea—either on orders from the Nabataean government in an effort to curb Ptolemaic commercial expansion in the Red Sea or as freebooters—and may have, on occasion, raided some of the Ptolemaic ports on the Red Sea coast. Such piratical activities by the Nabataeans and putative responses made by Ptolemy II to them[30] were symptomatic of expanded commercial interest in the Red Sea region and the need to protect it. The appearance in the third century B.C. of a Ptolemaic official styled ὁ ἐπὶ τῆς λιβανωτικῆς[31] stationed at Gaza suggests that the overland caravan trade to Egypt was substantial enough at the time to warrant the creation of an official to supervise the importation of aromatics from South Arabia.

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[25] *P. Cairo Zenon* 59012; P. Collart, P. Jouguet (1925):117-118; Préaux (1979):371-379; Préaux (1978):372-375.

[26] R. S. Bagnall (1976a):6, 227; Bingen (1978b):14-16; Fraser (1972):149-150; Rostovtzeff (1932b):737-747; Collart, Jouguet (1925):110-121.

[27] Rostovtzeff, *SEHHW*:389, 392.

[28] E.g. *P. Cairo Zenon* 59142; 59195; 59403; 59405; 59430; 59433; *PSI* 429; Rostovtzeff, *SEHHW*:358.

[29] B. Segall (1958):155-178.

[30] Diodorus Siculus 3.43.4-5; Strabo 16.4.18; *OGIS* 132 of 130 B.C. shows how the Ptolemies protected their merchants.

[31] *P. Cairo Zenon* 59001; 59009; *PSI* 628.

Ptolemy II may also have attempted to control Nabataean territory through which passed much of the overland caravan traffic from South Arabia thereby eliminating the Nabataeans as middlemen in that commerce.[32] However, the Ptolemies never circumvented the Nabataean and South Arabian middlemen for Diodorus Siculus, writing in the first century B.C., says (19.94.4ff) that the Nabataeans continued to enjoy a lucrative caravan trade with South Arabia in his day.[33]

Ptolemaic artistic and linguistic influences may be present in the Lihyanite kingdom of the northwest Hejaz,[34] but we doubt that the Ptolemies ever exercised any political or commercial hegemony over the Nabataeans or the Lihyanites, both of whom could call on the Seleucids to counter any Ptolemaic threat.[35] Nor is there any evidence that the Ptolemies attempted to control the kingdoms of South Arabia which supplied many commodities and served as middlemen in the limited contact between India and Egypt.

Ptolemaic relations with India are not very well documented. Diplomatic contact between the Mauryan emperor Aśoka and the Ptolemies and Seleucids is recorded in Aśoka's thirteenth rock edict in India, but the nature of this diplomatic exchange is unknown. Indeed, we cannot be certain that it ever took place.[36] On the other hand we know that there was some traffic between India and Egypt in the Ptolemaic period. Indian hounds were imported to Egypt—Zenon owned one, but these animals were not imported regularly and probably came indirectly via South Arabia. Exotic zebus, ebony and cinnamon were also imported for Athenaeus, citing Callixeinos of Rhodes, says (*Deipnosophistae* 5.201) that in a parade Ptolemy II exhibited these things which were imported from India.[37] Precious stones, other precious woods, silk and possibly cotton also came to Egypt from other Erythraean Sea lands though none is clearly Indian in origin.[38] A few Ptolemaic coins have been found in India.[39] Some plant species grown in India which appear in Roman sources as items of export to the Mediterranean are not recorded in the Ptolemaic papyri.[40] These facts suggest that direct trade or indirect contact between Egypt and South India in

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[32] Tarn (1929):15-16; Rostovtzeff (1932b):743.

[33] See also A. Negev (1976a):125-133.

[34] Tarn (1929):18ff.

[35] E.g. Polybius 5.71 when Arabs east of the Jordan River sided with Antiochus III against Ptolemy IV.

[36] Raschke (1975):242 and n. 5; Rostovtzeff (1932b): 743; B. G. Gokhale (1966):34, 52, 79. For text and translation of edict 13 see A. Cunningham (1961):84-88, 125-126.

[37] Rostovtzeff, *SEHHW*:359. For more on the parade of Ptolemy II see now Rice (1983): throughout.

[38] *CAH* 7:134.

[39] E. Hultzsch (1904):403; Thiel (1967):53-55; Rostovtzeff, *SEHHW*:1247-1248.

[40] Raschke (1975):244.

the Ptolemaic period was not as extensive as it became in the first and second centuries A.D.[41]

Discussion of Ptolemaic trade with India must consider the date of the discovery and use of the Hippalus monsoon which facilitated maritime traffic between Egypt and India. The monsoon allowed mariners to sail to India from points on the coast of South Arabia or East Africa directly, across the open sea, thereby avoiding the long coastal route. Controversy surrounds the question of the date of the discovery and first use of the monsoon by Western traders; estimates vary from *c.* 116 B.C.—the voyage of Eudoxus of Cyzicus to India—to *c.* A.D. 40—the voyage of Lysas the freedman of Annius Plocamus to Ceylon.[42] The date of the discovery of the direct sea route to India and its exploitation on a large scale by Western merchants is different. Indeed, the South Arabians must have known of and used this monsoon in their voyages to India for some time and it seems doubtful that this fact could have been kept secret from Western merchants visiting South Arabian ports. We might associate the appearance of the Ptolemaic official στρατηγὸς καὶ ἐπιστράτηγος τῆς Ἐρυθρᾶς καὶ Ἰνδικῆς Θαλάσσης, in an inscription from the Nile emporium of Coptos (*SB* 8036), with the earliest Ptolemaic use of the monsoon for trade with India. This official's precise function is unknown, but he may have had some connection with Ptolemaic maritime trade. If so, this makes the date of the appearance of the office and the date of earliest Ptolemaic use of the monsoons of some interest and would, if true, suggest that the Ptolemaic government sought to reap some fiscal profits from the development of that trade. However, lacunae in the inscription preclude precise dating and dates of 110/109, 74/73 and 45/44 B.C. have been proposed.[43] All that we can say for certain is that four other inscriptions attest that the office was held by one Kallimachos between 62 and 49 B.C.[44]

The date 110/109 B.C. is an attractive one. If we accept and associate the appearance of the Ptolemaic official with Eudoxus' discovery of the monsoon this allows a slight delay between discovery and the creation of an administrative post to handle trade resulting from use of the monsoon.

The date 74/73 is less attractive. Ptolemy Apion, the last king of Cyrenaica, had willed the region to Rome in 96 B.C. However, the Romans neglected the area and did not make it a province until 75/74 B.C. There is some temptation, initially, for us to associate the Roman reduction of Cyrenaica into a province

[41] Cf. Fraser (1972):141 who, however, cites no evidence to support his belief in direct or indirect commerce between Ptolemaic Egypt and India.

[42] For a summary of earlier literature on this topic see M. G. Raschke (1978):660ff and nn. 1271ff; Thiel (1967):12, 17ff., 44ff; L. Casson (1980b):21-36.

[43] L. Mooren (1972):127, 132; W. Otto, H. Bengtson (1938):1-22, 194-218.

[44] J. D. Thomas (1975):121-122 lists the inscriptions which are found in A. Bernand (1969): 306-311, no. 52; 311-314, no. 53; 319-321, no. 56; and *SB* I.2264.

and the creation of the new Ptolemaic official described above. Cyrenaica had, prior to 96 B.C., been a relatively prosperous domain of the Ptolemies and we might see, in its loss, an impelling reason for the Ptolemies to create a new administrative post in the Eastern Desert in an attempt to boost revenues from trade passing through that region. This would compensate for the revenues lost from Cyrenaica. However, between 96 and 75/74 B.C. Cyrenaica was racked with internal strife and the economic prosperity of the area declined dramatically. Furthermore, while the Romans did not exercise direct control over the region between 96 and 75/74 B.C., neither did the Ptolemaic government at Alexandria. In that period Cyrenaica was governed by local tyrants and became a haven for pirates.[45] Therefore, it is unlikely that we can associate the loss of Cyrenaica to Rome in 75/74 B.C. with the creation of the office of στρατηγὸς καὶ ἐπιστράτηγος τῆς Ἐρυθρᾶς καὶ Ἰνδικῆς Θαλάσσης. The new office may have been part of a Ptolemaic effort to raise revenues by increasing trade in the Red Sea and Indian Ocean regions. Alternatively, the office may reflect merely the reorganization of the Egyptian Red Sea coastal customs district to increase duties levied on imported wares or otherwise to collect such tolls more efficiently.

Strabo records (17.1.13) that Ptolemy Auletes' (ruled 80-58 B.C. and 55-51 B.C.) annual income from the revenues of Egypt was 12,500 talents, but this estimate leaves a number of questions unanswered. Does his figure include only Egypt or Egyptian possessions abroad as well? Does his figure represent revenues before or after the loss of the province of Cyprus in 58 B.C.? If Strabo records revenues after that date then the Ptolemies—specifically Auletes—apparently had found alternate sources of revenue. If his figure reflects Egypt's income before the loss of Cyprus then we must infer that that region was still a major source of income for the regime.

The papyri indicate Ptolemaic trade with South Arabia and, indirectly via South Arabia, with South India, but it is impossible to gauge the volume of this commerce. Egypt under the Ptolemies may have, ideally, set for itself the goal of economic autarchy; all of its primary natural resources—timber for ship building, metals for coinage and the military—were to be provided internally or from Ptolemaic domains in the Mediterranean and Aegaean. Any dearth in the domestic supply of important metals with which to pay the mercenary troops used by the Ptolemies could be made good by the sale of grain to other areas of the Mediterranean.[46]

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[45] W. V. Harris (1979):74, 267; Raschke (1978):661 favors a date of 74/73 B.C. for *SB* V 8036; for Roman involvement in Cyrenaica see S. I. Oost (1963):11-25; J. Reynolds (1962): 101; Appian, *Bell. Civ.* 1.13.111; Appian, *Mithridatic Wars* 12.17.121; for the wealth derived from Cyrenaica by the Ptolemies see Rostovtzeff, *SEHHW*:332-333.

[46] R. Meiggs (1982):133-138; Ed. Will (1966):148-178.

Economic autarchy was an impossibility. Imports from beyond Egypt's political-military sphere of influence were necessary and they were heavily taxed for the state's benefit. The Ptolemaic system was designed to make the state/king as rich and powerful as possible.[47] This is not to say that the interest or economic success of individual businessmen was ignored. On the contrary much of the state's wealth, at least from the Erythraean Sea trade, was derived from tolls and taxes levied on goods imported by private entrepreneurs. Indeed, it is possible that the role of private enterprise was greater in Ptolemaic Egypt than many scholars maintain.[48]

The traditional view that the Ptolemies coined on a different standard from other Hellenistic states to discourage trade abroad is unacceptable. Ptolemaic currency was on a trimetallic system of gold, silver and copper which was, it is true, "unknown in the rest of the Hellenistic world."[49] The eventual adoption under Ptolemy IV Philopator of a copper standard may have been due to the fact that silver for minting had become harder for the Ptolemies to obtain. Thereafter bronze/copper coinage became almost the sole coinage in common circulation in Egypt.[50] We can doubt that this shift to a copper standard was an effort to discourage foreign trade. Rather the opposite: the hard-to-get silver had to be reserved for foreign trade; the copper would remain for use inside Egypt itself.[51] However, there was a strict prohibition on the importation and use of foreign coins within Egypt itself; this did not effect the Ptolemaic possessions in the Mediterranean and Aegaean many of which continued to use local or other non-Egyptian issues.[52] Roman annexation of Egypt did not alter this situation; only coins from Alexandria and the nome mints were theoretically allowed to circulate inside Egypt and these issues were exclusively either copper or very debased silver (billon) before the Diocletianic reforms of the late third century.

The Ptolemies strove for economic autarchy—no doubt in order to save money—in other ways. They tried to transplant both frankincense and myrrh shrubs to Egypt in an attempt to free themselves from dependency upon South Arabian and African states which produced these products.[53] However, they do not seem to have been successful; imports of frankincense, myrrh, cassia,

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[47] Rostovtzeff, *SEHHW*:316.
[48] R. S. Bagnall (1982a):19.
[49] Rostovtzeff, *SEHHW*:400; T, Reekmans (1948):17-18.
[50] Reekmans (1948):18ff.; T. Reekmans (1949):324-342.
[51] For the effects of this widespread, if not exclusive, use of copper coinage in Ptolemaic Egypt see *P. Teb.* 884 and Reekmans (1949):324-342.
[52] Bagnall (1976a):194ff, 200f shows that this was not the case in the Ptolemaic possessions in the Aegaean and in southern Asia Minor where other currencies were used; see also Rostovtzeff, *SEHHW*:401.
[53] Fraser (1972):141, 175.

cinnamon, saffron and other aromata, spices and textiles continued.[54] These import items were, for the most part, converted into finished products in the factories of Alexandria for reexport outside the Ptolemaic realm.[55] Reworking of these raw materials for export together with levying high import and export duties—25-50% *ad valorem* rates were common—resulted in extensive revenues for the state.[56]

*Conclusion*

The Ptolemies initially built a number of ports and roads on the African Red Sea coast to acquire ivory, gold and elephants for the military. This initial contact soon expanded to include trade in aromatics and other commodities from South Arabia, goods traded to the Mediterranean world for some time before the rise of the Ptolemies. However, we are uncertain how the Ptolemies paid for these items. Since few Ptolemaic coins have been discovered in South India, Africa or South Arabia we might conclude that most trade with these regions was conducted by barter. However, the apparent dearth of Ptolemaic coins found in these areas may have another explanation. Perhaps Ptolemaic gold and silver coinage *was* traded for products from Africa, India and Arabia, but any such coinage may have been treated as bullion in these foreign lands and melted down leaving no trace as to its origin. The bulk of the Ptolemaic imports from other Erythraean Sea lands seems to have come from South Arabia and Africa. That few commodities of Indian origin reached Ptolemaic Egypt suggests that neither direct nor indirect trade between the two regions was extensive. Neither the discovery nor the use of the monsoons by Western traders in the Ptolemaic era led to any detectable sizeable increase in commerce between South India and Ptolemaic Egypt. The appearance of the στρατηγὸς καὶ ἐπιστράτηγος τῆς Ἐρυθρᾶς καὶ Ἰνδικῆς Θαλάσσης may be related to discovery of the monsoon by Western traders like Eudoxus, but we cannot be certain.

The Ptolemies were never able, if indeed they ever attempted, to exercise commercial or political control over the Nabataeans or Lihyanites through whose territory the caravan routes from South Arabia and the Persian Gulf passed. South Arabia was too distant for the Ptolemies to consider the commercial advantages of occupying the region. The Ptolemaic economy was

[54] Hanson (1972):161-166 and Collart, Jouguet (1925):110-121 cite papyri of the third century B.C. which list imports from South Arabia. See also Raschke (1975):241-246; Rostovtzeff, *SEHHW*:407-409 and Fraser (1972):141.

[55] Fraser (1972): 143 notes that little is known of manufacturing in Alexandria in the Ptolemaic period.

[56] See n. 25 and A. Andreades (1932):7-13.

rigidly controlled either by the government itself or through private individuals who farmed the right to collect taxes or control monopolies. We do not know what percentage of the Ptolemaic state revenues was derived from duties collected on the Erythraean Sea trade. Private enterpreneurs played a large role in most of the actual Erythraean Sea trade which was conducted in Ptolemaic times.

CHAPTER TWO

# ERYTHRAEAN SEA TRADE: WARES, TYPE, COST AND VOLUME

Determining the type, cost and quantity of items traded between the Roman world, South Arabia, South India and Ceylon is important in discerning Roman economic policy in the Erythra Thalassa. Information provided by Western and Tamil (South Indian) writers, details the kinds of goods traded, but it is relatively uninformative about costs. Pliny the Elder provides evidence of the value of some products. Yet he is practically the only source from the Roman period to do so. There is no literary evidence on exact quantities traded at a particular period or over a number of years.

Archaeological evidence from the Roman empire, South Arabia, South India and Ceylon on wares traded in the Erythraean Sea commerce verifies, and in a few cases supplements, literary statements. Epigraphic testimony reveals some prices. However, it does not, nor can it probably ever, provide precise statistics on volume.

Consideration of the kinds of merchandise traded and the cost as well as analysis of the authors writing about this trade determines whether this was a commerce in luxuries or necessities. Contrary to scholarly consensus, investigation of the volume of trade is inconclusive in determining whether Rome or her trading partners, South Arabia, South India and Ceylon, benefited most.

## *Roman Imports from South Arabia*

Let us deal with South Arabia first. Literary sources agree that the most important South Arabian exports to the Mediterranean world were frankincense and myrrh. Although regions of present-day Somaliland produced these items, as did areas within the Roman empire itself as we shall see below, the best quality and greatest quantity of frankincense and myrrh came from the South Arabian peninsula. References to the centers of production of frankincense and myrrh, and to their sale to the Mediterranean world, abound in the classical literature.[1]

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[1] See G. W. Van Beek (1958b):143-144; W. W. Müller (1979b):124-136; for the ancient sources see Strabo 1.2.32; 16.4.4; 16.4.19; 16.4.22; 16.4.25; Diodorus Siculus 2.49.2; 3.42.5; 3.46.3; 19.94.5; Tibullus 2.2.3-4; 3.8.17-20 *P. Bodl. 60*; Propertius 2.29.17(?); Vergil, *Aeneid* 1.416-417; Vergil, *Georgics* 1.57; 2.116-117; Columella, *De Re Rustica* 3.8.4; 10.263-264; Philostratus, *Vit. Ap. Ty.* 3.1; Ovid, *Fasti* 4.569-570; Pomponius Mela 1.10.61; 3.8.79; Pliny, *NH* especially 12.30.51-12.35.71; *PME* 24; 27; 28; 29; Seneca, *Tragedies*, *Hercules Oetaeus* 376; 791-793; *Hercules Furens* 909-911; Dionysius Periegetes, *De Situ Orbe* 933-939; Martial, *Epigrams* 3.65; Statius, *Silvae* 2.4.34-37; *Thebaid* 6.59-61; Herodian 3.9.3; Lucian, *A True Story* 2.5; Pseudo-Lucian, *Affairs of the Heart* 40(?); Athenaeus, *Deipnosophistae* 12.514; Ammianus Marcellinus 23.6.45(?); 29.1.30(?).

Rainfall, soil and altitude governed the geographical distribution of the frankincense and to a lesser extent the myrrh tree. The myrrh tree seems to have been much more adaptable, with a wider geographical distribution range than the frankincense. The production areas of both frankincense and myrrh slightly overlapped in Somaliland. This was not the case in the Arabian peninsula. There myrrh flourished mainly in the south-west quadrant and frankincense in the region of Dhofâr on the south central coast of the peninsula. Frankincense grew from the coastal plain up to the lower slopes of the Qara Mountains. At present, the best quality grows at elevations of 615-770 meters.[2] This was probably true in the first centuries of the Christian era.

Myrrh was a major cash crop for the South Arabians and was more widely grown than frankincense. In the kingdom of the Gebbanitae (Qataban?) Pliny states that myrrh producers paid 25% of their yield as a tax to the king. The production of frankincense was a royal monopoly in at least one South Arabian kingdom according to the *Periplus Maris Erythraei* (29), but literary souces do not indicate that myrrh was. Literary and archaeological testimony reveal that incense was also locally consumed in South Arabia in large quantities.[3] Myrrh was important to the Gebbanitae. In the Wadi Beihan, the area around Timna', capital of the Gebbanitae, archaeologists discovered the remains of myrrh groves dated mid-second millennium B.C. to second century A.D. We do not known who owned the groves.[4]

There were a number of other items credited to South Arabia. Pearls were an important and popular commodity in the early principate in the Mediterranean area. Pliny reports (*NH* 9.58.117) that Caligula's consort Caesonia owned a garment decorated with 40 million sestertii worth of pearls. Other imports to the Mediterranean world from South Arabia were bdellium, used in religious rituals (*NH* 12.19.35; *PME* 48; 49), sardonyx (*NH* 37.23.87), and salted lizards used as food and aphrodisiacs (*NH* 28.30.119). Cinnabar came from Socotra, an island off the south coast of Arabia (*PME* 30) and sugar came from the

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[2] For a description of a frankincense tree see Van Beek (1958b):141 and Diodorus Siculus 5.41.5; on the areas of production in Somaliland, see Van Beek (1958b): 144; on elevations where frankincense is grown today see Van Beek (1958b):142 and n. 12; see Pliny, *NH* 12.30.52; *PME* 27-30; Ptolemy 1.17; Strabo 16.4.4 disagrees with these later authorities, but modern research has shown him to be inaccurate.

[3] On the 25% tax see Pliny, *NH* 12.35.68; on the Gebbanitae and their equation with Qataban see A. F. L. Beeston (1975b): 4-8; see Pliny, *NH* 12.34.67 for an ancient description of a myrrh tree. R. L. Bowen, Jr. (1958a):149-153 describes a number of incense burners from South Arabia. See also Strabo 16.4.19 on the use of cinnamon and cassia as firewood in South Arabia.

[4] R. L. Bowen, Jr. (1958d):62, 67-68; Pliny, *NH* 12.35.69 lists seven varieties of myrrh, each of which was named after the region in which it grew: Cave Dwellers; Minaean (including Astramitic, Gebbanitic and Ausaritic); Dianite; a mixture from various sources; Sambracene; Duritire and from the region of Mesalum. This indicates that myrrh production was widespread. However, no single region produced the best quality myrrh.

peninsula itself (*NH* 12.17.32). South Arabia produced four varieties of cardamom (*NH* 12.29.50), the best gum ladanum (*NH* 12.37.73) and enhaemon —styptic— (*NH* 12.38.77-78). Some ancient writers erroneously believed that cinnamon, ostriches (Athenaeus, *Deipnosophistae* 4.145) cassia, costus, valuable stones (Strabo 16.4.22), nard (Apuleius, *Golden Ass* 2.9) and silk (Propertius 2.3.15), which we will discuss below, also originated from South Arabia.[5]

Modern scholars persist in labeling frankincense, myrrh and other herbs and spices as "luxury goods" and conclude that Rome's Eastern trade was mainly one of luxury items. Indeed, these aromatics were mainly luxury consumer goods in the nineteenth and twentieth centuries. However, they did not have this status in antiquity at least among the ancient authors who discuss them and their aristocratic social peers. Ovid, Propertius, Tibullus, Celsus, Pliny the Elder, Columella and Statius reveal that frankincense, myrrh and other herbs and spices served mainly religious, funerary, culinary or medicinal purposes.[6] These were hardly luxury expenditures to the ancient aristocrat, but necessities. However, given their prices, it is doubtful if these aromatics in large quantities were within the financial reach of the common man. Other items imported from South Arabia were considered luxuries even by aristocrats—valuable stones, pearls, ostriches. It is clear, nevertheless, that Roman aristocrats considered many Roman imports from South Arabia as necessities of daily life.

### *Roman Exports to South Arabia*

We have relatively little evidence concerning Roman exports to South Arabia. We have some indication, from excavations and surveys in South Arabia—the modern Yemen Arab Republic, the Peoples' Democratic Republic of Yemen and Oman—that someone residing in these regions used Roman goods. Exca-

[5] On pearls see Pliny, *NH* 9.54.106; 9.56.114; 9.58.117; 12.1.2; 12.41.84; Aelian, *De Natura Animalium* 10.13(?); on cinnamon Propertius 3.13.8; Statius, *Silvae* 4.5.30-32;5.3.42-43; Diodorus Siculus 2.49.3; 3.46.3; Strabo 16.4.19; 16.4.25; Seneca, *Tragedies, Oedipus* 117; Pomponius Mela 3.8.79; on cassia see *P. Bodl. 60*; Strabo 16.4.25; Diodorus Siculus 2.49.3; 3.46.2 on costus see Diodorus Siculus 2.49.3.

[6] On the modern scholars see M. G. Raschke (1978):669, 1012-1013 nn. 1487-1498; J. Thorley (1969):209; H. G. Rawlinson (1916):102; J. Guey (1937):21; M. P. Charlesworth (1974):60; E. H. Warmington (1928):38, 256; S. L. Wallace (1938):255; M. I. Rostovtzeff *SEHRE:* 67; A. L. Basham (1968):231; J. I. Miller (1969):216; J.-P. Lévy (1967):74; T. F. Carney (1973):105; A. H. M. Jones (1974a):138. See Ovid, *Metam.* 1.248-249; 4.11; 4.759; 6.161; 6.163-164; 6.172; 7.160-161; 7.592; 8.266; Ovid, *Fasti* 1.172; 1.719; 4.150; Ovid, *Tristia* 1.2.104; 2.59; 2.76; 3.3.69; 3.13.16; 4.2.4; Ovid, *Epistulae ex Ponto* 1.4.53-55; Propertius, 3.10.19; 4.6.5; 4.9.28; Tibullus 1.3.7; 1.3.34; 1.7.53; 1.8.70; Celsus, *De Medicina* 3.16.2; 4.11.6; 4.21.2; 5.1; 5.25.5; Pliny, *NH* 12.41.83; and especially books 28-33; Columella, *De Re Rustica* 6.4.2; 6.5.3; 6.30.9; 6.38.3; Statius, *Silvae* 2.1.21; 2.1.160-162; 2.6.85-89; 4.4.91; 4.8.1-2; 5.1.211-212; Statius, *Thebaid* 1.262-264; 4.412; see J. A. MacCulloch (1914): 202-204 on the importance of incense in funerals and religion in the Roman world.

vations at Timna' produced different varieties of Roman ceramics, of eastern Mediterranean manufacture, Roman glass and bronze statues of Ptolemaic provenance, but no Roman coins. These finds establish a chronology for Roman contact with the city for the objects date between *c.* 11 B.C. and A.D. 96. This suggests that there was some type of communication between Timna' and the Roman world under the Julio-Claudian and Flavian emperors—that is from Augustus to Domitian (30 B.C.-A.D.96).[7]

Excavations at Khor Rori, identified by some as the port of Moscha mentioned in the *Periplus* (32), on the south coast of the Arabian peninsula also revealed Roman pottery dating to the turn of the Christian era. A Byzantine coin was also found. The discovery of Roman ceramics suggests some type of commercial contact, either direct or indirect, between this port—which lay on one of the sea routes used by the Romans sailing to India—and the Mediterranean region in the reign of Augustus.[8]

Archaeological surface surveying of areas of South Arabia has also added to evidence concerning trade between this region and the Roman world. One survey by the Egyptian Antiquities Service, took in four port areas—Al Ara, Ras el Ara, Umm Hogarth and Soukiya. The surveyors discovered much glass and an unattributed bronze Roman coin and suggested that these ports were important in the classical period.[9] There have been other archaeological surveys in South Arabia in North Yemen, Aden (South Yemen) and in the Hadhramaut area. These surveys discovered evidence of human civilization from very early periods until after the rise of Islam in the seventh century A.D., but their results bear little upon our present discussion.[10]

Surveys conducted at Zafar, capital of the Himyarite kingdom, revealed a very common type of storage jar handle that parallels one discovered at the Egyptian Red Sea port of Quseir al-Qadim—the ancient Leukos Limen. This together with the discovery of a Himyaritic graffito and a Sabaean graffito on sherds from Quseir, suggests Himyaritic and Sabaean contact with Egypt. This does not invariably indicate that Himyarites and Sabaeans themselves resided at Quseir though evidence below suggests that they did.[11]

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[7] H. Comfort (1958):199-212; on the statues see B. Segall (1958):155-178; G. F. Hourani (1952):292; W. F. Albright (1950): 10.

[8] H. Comfort (1960):15-20; R. L. Cleveland (1960):14-26; J. Pirenne (1975):81-96; A. F. L. Beeston (1976a):39-42.

[9] Z. A. Hawass, "An Archaeological Survey of South Yemen," an unpublished 20 page lecture dealing with a survey from December 1976 to March 1977.

[10] See A. Fakhry (1951-1952); G. L. Harding (1964); G. W. Van Beek, G. H. Cole, A. Jamme (1963):521-545.

[11] R. D. Tindel (1980):101-102 on his survey of Zafar. For more on Zafar in the Medieval period see N. A. Faris (1938):20-28; *The American Institute for Yemeni Studies Newsletter* 2 (July, 1979):7; for the graffiti from Quseir see G. B. Gragg (1979):244-245; for the Sabaean graffito see letter from W. W. Müller to author of January 6, 1983 and forthcoming publication.

Some of the Roman goods found in South Arabia may not have been "imported" at all, but may simply be curiosity pieces or souvenirs obtained by South Arabian merchants who traded with the Mediterranean region. Possibly, too, Romans trading with or living in South Arabia used some of these "imports" though there is no further evidence at this time of their habitation in that area. In any case, South Arabian inscriptions from the Fayum, the Eastern Desert of Egypt and the island of Delos attest such contacts with the Mediterranean world in the Ptolemaic and Roman periods.[12]

Egyptian archaeological evidence concerning Roman trade with South Arabia is limited to the few Himyarite sherds and Himyarite and Sabaean graffiti from Quseir al-Qadim and from South Arabian graffiti from the Eastern Desert mentioned above. Egypt was both a transit point for Mediterranean goods as well as an exporter itself of items shipped to South Arabia and South India. Excavations at Quseir al-Qadim, identified with the port of Leukos Limen on the basis of an ostracon unearthed there bearing the inscription "Leuk"—one of several Roman ports on the Egyptian Red Sea coast—unearthed Roman wares similar to those from Timna' suggesting a link between these two places.[13] Undoubtedly the Roman ceramics from Timna' were imported by sea from Egypt rather than by caravan returning via Nabataea.

Excavations at Quseir al-Qadim produced a large quantity of Roman cloth, perhaps destined for export. The presence of glass slag at Quseir indicates the existence of glass manufacturing at the port. We would expect to find glass industries at a port like Quseir as the sand necessary for glass making is abundant on the nearby beach. The glass manufactured at Quseir may have been exported to South Arabia or used at the port itself. Excavations at Quseir discovered large quantities of glass made at other Mediterranean cities. This, too, may have been destined for export from Quseir to other Erythraean Sea lands or used by inhabitants of the port itself.[14] The glass from Quseir poses the problem of determining which goods made in Egyptian Red Sea ports or shipped to those ports were locally consumed or intended for export beyond Roman borders. At present we cannot distinguish between the two possibilities.

One group of ostraca mention some items of trade whose ultimate destination was the Red Sea ports themselves or South Arabia-South India-Ceylon. These ostraca, ranging in date from 6 B.C.-A.D. 68/69, were found at Coptos, the

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[12] For the various South Arabian inscriptions see *RES* 2771, 3022, 3427, 3570, 3571 and G. Ryckmans (1949):56-57, nos. 360-361; for commentary on these inscriptions see Ch. Clermont-Ganneau (1908):546-550 = *RES* 3570. G. F. Hourani (1951):23 cites this inscription and comments on it as does M. I. Rostovtzeff, *SEHHW*, 702 n. 124. A. F. L. Beeston (1937):59-78 talks about the Fayum inscription (*RES* 3427). Hourani (1951):23 believes that *RES* 3427 has value as a commercial document while Raschke (1978):657 does not. For further discussion see chapter 4.

[13] *The American Institute for Yemeni Studies Newsletter* 2 (July, 1979):7.

[14] *PME* 24 mentions the export of cloth to South Arabia; A. Roth (1979):144ff; C. Meyer

transit point on the Nile for goods to and from the Egyptian Red Sea ports. They are receipts for goods sent to Myos Hormos and Berenice, ports north and south of Leukos Limen. Although Leukos Limen is not mentioned, these ostraca enumerate goods, especially wheat which would be typically dispatched to any of the Red Sea ports of Egypt either for consumption there or for export.[15]

Undoubtedly some of the wheat and wine mentioned in the ostraca was destined for export to South Arabia, as the *Periplus* indicates, but some would have been consumed in the Red Sea ports themselves. The Red Sea coast of Egypt is now, as in antiquity, extremely arid and the pursuit of agriculture impossible. The inhabitants of these ports had to import all their necessities except those obtained from the sea.[16]

Other Mediterranean products exported to South Arabia included coarse and fine purple cloth, woven goods (clothes, cloaks, blankets, etc.), saffron, sweet rush (*PME* 24) and linen.[17] Egypt exported to Cana and Muza in South Arabia copper, tin, coral, storax and horses and mules for the king as well as fine clothing and gold and silver plate (*PME* 24; 28). The king's agents at Moscha bartered frankincense for Roman sesame oil, wheat and cloth (*PME* 32).

Neither the archaeological nor the literary evidence points to the use of Roman coinage in transactions with South Arabian kingdoms. This is odd since South Arabians certainly were familiar with coinage and even imitated Mediterranean types and weights. This may, in part, be due to the dearth of archaeological investigation in this region. Possibly the South Arabians melted down the coins leaving no trace of their existence. Alternatively, Roman silver and gold bullion and/or plate may have taken the place of coins. Diodorus Siculus (3.47.5), Strabo (16.4.19 and 22), Dio Chrysostom (79.5), as well as the *Periplus* (28), indicate that the Romans often used bullion or plate as well as barter in South Arabia (*PME* 32). *O. Petr.* no. 290 dated July 22, A.D. 62 refers to the shipment of silver bullion to Myos Hormos. This silver was, most likely, destined as a shipment to South Arabia or South India. A Papyrus (*P. Giess.* 47) of A.D. 117 deals with the price of silver bullion at Coptos, no

(1982b):215-232; on glass exports see Raschke (1978):650, nn. 994-995; cf. D. B. Doe (1971): 134-135 for a glass manufacturing site in South Arabia.

[15] *O. Petr.* 108-125, nos. 205, 209, 220-304 were all found at Coptos. For a study of these ostraca see A. Fuks (1951):207-216; A. C. Johnson, *ESAR* 2, 381-382 also discusses Nicanor; on Coptos as a transit point see Johnson, *ESAR* 2:343-344; Raschke (1978):644, nn. 820-824; W. M. F. Petrie (1896):22-35; J. Schwartz (1960):22, 23, 42; *P. Giess.* 47; Pliny, *NH* 5.11.60; Strabo 16.4.24; 17.1.45; for wheat *O. Petr.* 229, 230, 231, 232, 233, 253, 256, 266.

[16] *PME* 24, wheat and wine to Muza; *PME* 28, wheat and wine to Cana; *PME* 32, wheat to Moscha; on the arid terrain of the Red Sea coastal area see L. A. Tregenza (1955); and A. E. P. Weigall (1909):57-58; the author's observations while excavating and surveying in the Eastern Desert Jan.-March 1980. On locally obtained marine food see P. Wattenmaker and P. Lacovara (1979):250.

[17] Raschke (1978):650, nn. 994-995 mentions linen as a major export.

doubt for use in the Eastern trade.[18] If the Romans traded bullion we could not detect that payment was Roman in origin. Unlike the South Indians, it seems that the South Arabians preferred payment in plate and bullion rather than coin. Considering the large number of Roman coins in South India, it is improbable that the dearth of Roman coins in South Arabia is due to a Roman government ban on their export or to merchant avoidance of trading these coins for South Arabian wares.[19]

South Arabian texts reveal little concerning the lucrative trade with the outside world. Perhaps, as in the case of the Romans, there was a condescending attitude towards some types of mercantile activities for which the dearth of texts on the subject supplies an *argumentum e silentio*. However, there are a handful of South Arabian texts from Egypt, the island of Delos and the Arabian peninsula which indicate contact or trade between South Arabia and the Mediterranean world; two from Arabia specifically refer to trade with Egypt; the others—given their location on the trade routes—perhaps suggest such mercantile connections.[20] A mercantile code was discovered at Timna'. The code does not mention the incense trade or any long-range commerce at all, but limits itself to local business. It indicates close governmental supervision of all aspects of trade and specifies a "most favored" trade status for Gebbanite merchants to the disadvantage of foreigners doing business in Gebbanite territory. Although some scholars date this code to *c.* 115 B.C. it may, in fact, be later in date. Scholars place the end of the Minaean state—Minaeans are refered to in the code—to between 125-75 B.C. and reference to the Minaeans suggests a *terminus ante quem* for the code. However, though the Minaeans may have ceased to exist as an independent or autononous political entity, they continued to exist as an ethnic/tribal group. It may be in this latter context that they are referred to in the "Qatabanian" market code. If so, this

[18] On Roman coins in South Arabia Kaiky Muncherjee (1925), an Indian merchant residing in Aden in the 1920s, assembled a collection of antiquities from South Arabia. Eventually, he produced sales catalogues of his collection in order to sell the items. There are only three copies of these catalogues in existence, one set of which is in the possession of the Oriental Institute of Chicago. The author was fortunate to study these volumes. The volumes are unnumbered. One volume contains the bronze collection, the second the alabaster and stone collection and the third the gold collection. There were a number of Roman bronze coins in the bronze album. These included several of Antoninus Pius; a sestertius of Faustina the Elder; an AE of Augustus, an Alexandrian tetradrachm of Probus and various unidentifiable fourth-century bronzes. The gold volume had four solidi of Constantius II, one of Jovian, one of Valentinian I and one smaller, probably an aureus, of the first century, but unidentifiable. All these finds are from unknown contexts. Their value for our purposes is, therefore, minimal. For the South Arabian coins themselves see B. V. Head (1911):813; G. F. Hill (1922):xlv-lxxxiv; G.F. Hill (1915-1916):57-85; C. Rodewald (1976):98, n. 200; A.F.L. Beeston (1959):12, clauses 5-6; J. Walker (1937): 260-279; Doe (1971):120-121.

[19] Doe (1971):120 suggests that Roman coins merely passed through South Arabia and that the South Arabs used them to purchase goods from the East.

[20] See n. 12.

throws the date of 115 B.C. for the code into doubt; it could be later in date. This code and one other Minaean market code which also outlines acceptable commercial practices are evidence for South Arabian interest in commerce, though not specifically with the Mediterranean world.[21]

The evidence reveals that South Arabia imported both luxuries—fine cloth gold and silver plate, horses and mules—and necessities—wheat, wine, sesame oil, cloth, glass. However, it is impossible to determine which category was the more important in Roman export trade to that region.

*Roman Imports from India*

Mediterranean trade with South India is more abundantly documented than that with South Arabia. This is, in one respect, unusual. The trading venture by sea to Arabia was, for those living in the Mediterranean, a relatively simple and short trip. However, to sail to India and back even using the monsoons, was a very dangerous one year undertaking.[22] Archaeological evidence both in South India and the Mediterranean area sheds light on the type and, to some extent, the quality of the items traded. There are classical as well as Tamil literary references to transit trade, which is not well documented in the period prior to the Roman occupation of Egypt.

The three most valuable writers on Rome's India trade are the *Periplus Maris Erythraei*, Pliny the Elder's *Natural History* and Claudius Ptolemy's *Geography*, but other classical and Tamil sources provide occasional scraps of information. Major items of export from India to the Roman world, well attested in the classical sources, included pearls, pepper, ivory, tortoise shell, precious and semi-precious stones of various kinds and cinnamon. Iran or Afghanistan probably supplied turquoise and lapis lazuli to the West via India (*PME* 39). There were numerous other items which the Romans obtained from India. The Romans imported exotic animals as pets, or for the games. These included tigers, the one-horned rhinoceros (*NH* 8.29.71), parrots, peacocks, other pet birds (Columella, *De Re Rustica* 8.8.10), and hounds (Dio Chrysostom, *Third Discourse* 3.130). A rescript of the emperors Marcus Aurelius and Commodus (ruled jointly A.D. 177-180), dealing with evasions of customs duties somewhere in the eastern part of the empire, also mentions panthers and leopards, imported no doubt from India (*Dig*. 39.4.16.7). Though Ptolemy (7.2) believed that lions and elephants came from India, there were other sources for these beasts nearer to Rome. In addition, large snakes (Strabo 15.1.45) and

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[21] Beeston (1959); and Beeston (1971); N. V. Pigulevskaia (1971):145-147 also deals with this decree. H. von Wissmann (1976): 311, 395, 406, 418, 420, 441; Albright (1950):11 dates the end of the Minaean state to between 125-75 B.C.; on the Minaean market code see Beeston (1978):142-145.

[22] L. Casson (1980b):27.

corcottae came from India, although we do not know the period of their first appearance in the West. On the whole, however, fewer animals and animal products came from India than plants and plant products.[23]

Nard, cassia, costus, ebony, teak wood, cotton and cotton cloth-muslins were Indian exports. Silk also came from India (*PME* 49; 56; 64; *Kauṭilīya Arthaśāstra* 2.11.107-114). The Romans obtained spikenard (*PME* 48; 49; 56; 63), caryophyllon grain used for its scent (*NH* 12.15.30), sugar cane (*NH* 12.17.32), lycion (*NH* 12.15.30) and macir ( = red bark = tellicherry bark?) for medicinal purposes (*NH* 12.16.32). The Romans may also have imported ships' masts and yard arms from India. The Romans sought an Indian millet grown in Pliny's day which had a huge yield capacity (*NH* 18.10.55); one grain produced approximately 1.65 liters! Other items shipped from India included rice, gingelly (sesame seed) (*NH* 18.22.96), aloe (*NH* 27.5.14), aloe wood (*NH* 12.44.98), indigo (*NH* 35.27.46), myrrhine (?), malabathrum (*PME* 56; 63; 65), cumin seeds (Persius, *Satires* 5.55) and fragrant herbs, spices and perfumes. One source mentions the import of Indian iron (*Dig.* 39.4.16.7). Western gourmets sought delicacies like mushroom spawn (Petronius, *Satyricon* 38) and lizards salted as food or used as aphrodisiacs or medicines.[24]

[23] On pearls see Pliny, *NH* 6.24.81; 9.54.106ff; Tibullus 3.8.17-20=4.2.17-20; *PME* 59, 63; Seneca, *Tragedies, Hippolytus or Phaedra* 391-392; Propertius, 1.8.39; Petronius, *Satyricon* 55; Arrian, *Indica* 8.8.9; Clement of Alexandria, *Paedagogue* 3.4.30.4; Martial, *Epigrams* 9.13; Athenaeus, *Deipnosophistae* 3.93; *P. Oxy.* 1273. On pepper see Pliny, *NH* 6.26.105; 12.14.28-29; 19.19.58; *PME* 49, 56; Persius, *Satires* 5.55(?); *Treatise of Eusebius* 17; *P. Oxy.* 921; *P. Teb.* 273; *P. Ryl.* 29a; on ivory see Pliny, *NH* 8.4.7; 8.10.31; *PME* 49, 56; Strabo 2.1.14; Catullus 64.48; Dio Chrysostom 79.4; *HA, Firmus* 3.4-6; Pausanias 5.12.3; Vergil, *Georgics* 1.57; Dio Cassius epitome 75.4.6; Horace, *Odes* 1.31.6; Lucian, *On Sacrifices* 11; Statius, *Silvae* 3.3.94-95; 4.2.38-39; Martial, *Epigrams* 5.37.5; Dionysius Periegetes 1115-1125. For a brief account of ivory in the classical period see H. H. Scullard (1974):260-261; for tortoise shell see *PME* 56, 63; Pausanias 8.23.9; Strabo 2.1.14; Apuleius, *Golden Ass* 10.34; Pseudo-Lucian, *Lucius or the Ass* 53; for precious and semi-precious stones see Dionysius Periegetes 1115-1125 on beryls; Pliny, *NH* 37.20.76 and 79 where Pliny warns of counterfeit beryls from India; for opals see Pliny, *NH* 37.21.80; 37.22.83; 37.46.130; Pliny, *NH* 37.22.83 warns of counterfeit opals made of glass; for carnelian Pliny, *NH* 37.23.87; *PME* 48, 49; sardonyx: *NH* 37.23.86; Martial, *Epigrams* 4.28; agate: *PME* 48, 49; amethysts: Dionysius Periegetes 1115-1125; *NH* 37.40.121; on the import of Indian gems in general see *NH* 37.76.200; Dio Cassius, epitome 73.17.3; 75.4.6; Seneca, *Tragedies, Medea* 725; Philostratus, *Vit. Ap. Ty.* 3.27; Propertius 2.22.10; Lucian, *The Goddess of Surrye* 16, 32; Clement of Alexandria, *Paedagogue* 3.2.4.2; 3.4.30.4; *PME* 56; Arrian, *Indica* 8.8.9; Diodorus Siculus 6.4.1; Pseudo-Lucian, *Affairs of the Heart* 41; on the precious stones of the Romans see S. H. Ball (1950). On cinnamon Pliny, *NH* 12.42.85-93; Strabo 15.1.22; Ptolemy, *Geog.* 7.2; on tigers see Pliny, *NH* 8.25.65-66; Seneca, *Tragedies, Oedipus* 458; Juvenal, *Satires* 15.163; on parrots see Pliny, *NH* 10.58.117; Pausanias 2.28.1; Ptolemy, *Geog.* 7.2; Ovid, *Am.* 2.6.1; for peacocks in the pre-Roman period see Aelian, *De Natura Animalium* 11.33; for peacocks as food see Lucian, *The Ship or the Wishes* 23; *HA, Elagabalus* 20.5; on elephants in general see J. M. C. Toynbee (1973) and H. H. Scullard (1974):216; on corocottae see *HA, Antoninus Pius* 10.9 which claims that the emperor exhibited one while Dio Cassius epitome 77.1.3-4 says that it was first introduced from India in the time of Septimius Severus.

[24] On nard see Pliny, *NH* 12.26.42-44; Strabo 15.1.22; Celsus, *De Medicina* 6.6.6; 6.6.9; on cassia see *P. Bodl. 60*; Pliny, *NH* 12.43.95-97; Strabo 16.4.25; on costus see Pliny, *NH* 12.25.41;

The Roman world imported Indian slaves, but ancient references to this trade are imprecise. Some of the Indian slaves may have been brought to the empire via Egypt. Philostratus (*Lives of the Sophists* 1.8) refers to an Indian slave of Herodes Atticus (mid-second century A.D.) and the rescript of Marcus Aurelius and Commodus mentioned above (*Dig*. 39.4.16.6-7) mentions Indian eunuchs. Tracing the origins of bearers of names like Indos or Indikos has met with inconclusive results. Scholars have shown that attempting to identify geographic origin by a person's name in antiquity is hazardous. In any event, it seems that importation of slaves to India from the West was less unimportant than Indian exports of human cargo to the West.[25]

Archaeological evidence concerning South Indian exports to the Roman world is slight compared to literary testimony, but revealing. Finds of a peppercorn, teakwood and Indian ceramics plus a carnelian gemstone—though the latter could equally have come from South Arabia —at Quseir al-Qadim attest links with the subcontinent. Indian wares found in the excavations of the Roman trade station at Viranpatnam-Arikamedu on the Coromandel coast of South India and from other trade stations in South India are similar to those from Quseir al-Qadim. The discovery of a large number of dyeing vats at Arikamedu suggests that some of the Indian export muslins were dyed here. Alternatively, imports of western cloth might have been dyed here prior to sale elsewhere in India. Quantities of Roman cloth found at Quseir may have been destined for the Indian market (*PME* 48; 49). Excavations at Arikamedu uncovered large numbers of gem stones and perhaps they, too, were destined for a Roman market. Arikamedu not only may have imported from, but exported to, the Mediterranean.[26]

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*PME* 48, 49; Ovid, *Fasti* 1.337-342(?); on ebony see Pliny, *NH* 12.8.17; 12.9.20; Strabo 15.1.37; Vergil, *Georgics* 2.116-117 and R. Meiggs (1982):285-286; on teak wood see *PME* 36 and L. Casson (1982b):181-183; on cloth see *PME* 39, 41, 48, 49, 51, 62, 63; K. A. Nilakanta Sastri (1955):85 believes that this was an important trade item. On bdellium see Pliny, *NH* 12.19.35-36; *PME* 48, 49; on ships' masts and yardarms see N. Lewis (1960):137-141; on rice see P. Meile (1940):93; on herbs, spices and perfumes see Juvenal, *Satires* 6.466ff; *HA*, *Elagabalus* 31.4; Philostratus, *Vit. Ap. Ty.* 7.39; on iron see *Dig*. 39.4.16.7. This seems to be part of a tariff list and probably deals with commodities imported from the East to the Egyptian Red Sea ports, but if so the list is incomplete. On lizards see Pliny, *NH* 28.30.119-120; 30.27.88.

[25] On the import of Indian slaves see Horace, *Satires* 2.8.14ff; possibly Tibullus 2.3.49-58; on tracing the origins of "Indian" names see M. G. Raschke (1975):241-246; see also S. Treggiari (1969):6; A. M. Duff (1928):1-11; W. L. Westermann (1955):96-102. In one case the name Indus may have Celtic origins: Tacitus mentions "Iulius Indus e civitate eadem Treverorum" in *Ann*. 3.42; see W. Schulze (1966):20-21 and A. Holder (1962):41 *s.v.* "Indus." For a survey of the Rome-India slave trade see W. Schmitthenner (1979):94, 96.

[26] For Indian finds at Quseir see W. R. Johnson and D. S. Whitcomb (1979b):68-70; J. H. Johnson (1982a):263-264; C. Meyer (1982b):230; D. S. Whitcomb (1982a):67; J. H. Johnson (1982b):337; on Viranpatnam-Arikamedu and other trade stations in South India see R. E. M. Wheeler (1954):172-179; R. E. M. Wheeler (1946):49-91; R. E. M. Wheeler (1951):355; J. M. Casal (1949):38-54; K. S. Ramachandran (1980):90-140; R. Nagaswamy and A. Abdul Majeed (1978): *passim*; C. Maloney (1975):13ff; for an atlas locating these sites in India see J.

In one instance, archaeological evidence reveals an import from India unattested in the literary sources. Excavations at Pompeii recovered an ivory statuette of Lakşmi, the Indian goddess of good luck and prosperity. Pompeii offers a *terminus ante quem* of A.D. 79 for the importation of this *objet d'art*. Though ivory is mentioned in the *Periplus* as an Indian export to the Roman world,[27] there is no mention of ivory sculpture being exported from the subcontinent. Is this statuette representative of an art trade between India and the West unrecorded in the sources or is it merely an isolated example of an Indian art object imported by some Roman connoisseur? Most likely it is a curiosity piece which somehow made its way from India to Pompeii prior to August A.D. 79.

Tamil writers refer to trade with the Yavanas of the West, whose identity is discussed below, but they are not as numerous or informative as the classical sources. The principal Tamil sources on trade with the West are the poets of the third Śaṅgam (academy). They wrote the "Eight Anthologies" (Eṭṭutokai) which together with over 2000 poems made up a larger body of literature. These, in addition to the "Ten Songs" (Pattuppāṭṭu) of somewhat later date, are important to the discussion of the Rome-India trade. None of these is precisely dated. Some belong to the middle ages and therefore do not represent a contemporary account of trade with the Mediterranean world. Some, however, can be dated to the second and third centuries A.D. Often times, too, classical literary sources or archaeological evidence indicate that some of these poems do, in fact, describe the Rome-India trade quite accurately. One other important Indian document, the *Kauṭīliya Arthaśāstra*, dated to *c.* A.D. 150, also discusses India's trade with the Yavanas of the West.[28]

One poem written about the Malabar coast port of Muziris discusses how the Yavanan ships traded gold for pepper at Muziris:

> ...When the good vessels, masterpieces of the Yavanas, come they mix the white foam of the Periyar, river of Ceralas. They arrive with gold and depart with pepper...[29]

There is confirmation of this exchange in Western literary references and in the large numbers of Roman aurei found in South India. Muziris was a frequent

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Schwartzberg (1978):24 pl.III.C.5; on cloth see J. Brookner (1979):183-195; G. Eastwood (1982):285-326; on gemstones see Casal (1949):22, 31-33 and Wheeler (1946): 101, 121-124.

[27] Wheeler (1954):163; A. Maiuri (1938-1939):111-115; See R. M. Cimino and F. Scialpi (1974):28-29 for a bibliography on this statuette. For ivory in the *PME* see *PME* 49, 56.

[28] A. L. Basham (1968):80; G. L. Hart (1975):41-42; Meile (1940):88-89, 99ff; O. Stein (1935):343-357; Cimino and Scialpi (1974:21-23; K. A. Nilakanta Sastri (1976): 139 mentions Tamil literature on the subject, but gives no references; M. Cary and E. H. Warmington (1963):102-103 cite some of these Tamil poems and give references to others; on the date of the *Kauṭīliya Arthaśāstra* see T. R. Trautmann (1971):169ff.

[29] Author's translation from the French of Meile (1940):90 of Tāyan-Kaṇṇanār, *Āgam* 149, lines 7-11.

port of call for Western traders (*PME* 54) and, according to Pliny (*NH* 6.26.104), the preeminent trade station in India.[30]

Another Tamil poem describes how smaller boats carried freight between ocean-going ships and the shore at Muziris. Rice, fish, sacks of pepper and other merchandise were all traded there, as was gold carried there by ship. Though there is no specific reference to these ships being Yavanan, the *Periplus* (49) reveals that ships from the Roman empire frequently brought gold to Barygaza, a port in western India. One Indian source praised pearls for their beauty and profits realized from their sale. The export of precious gems to the Roman world is attested in another Tamil poem of uncertain date. The *Kauṭīliya Artha-śāstra* (2.11.107-114)—the compilation of many authors, probably over a period of time, and an important source of information on Indian views on the control of government and the organization of an economy—indicates that the various states in India produced many different types of silk, some of which were probably exported to the Roman world.[31]

The literary evidence indicates that some Roman imports from India—ebony, ivory, precious stones, perfumes, animals for the games or as pets—were luxuries. However, a number of Indian exports to the Roman world were necessities: plants or plant products—cotton and cotton cloth, pepper, rice, grains, etc. —most of which served as condiments, food, clothing or for medicinal purposes. Unfortunately, due to lack of statistics on the volume of this trade we do not know the quantities of luxury and non-luxury goods traded. We cannot conclude that the Rome-India trade was dominated mainly by luxury or non-luxury goods; we can conclude that this trade was not exclusively one in luxury commodities.[32]

### *Roman Exports to India*

We cannot determine whether India imported fewer items from the Roman world than it exported.[33] Yet, India seems to have imported more from the Mediterranean region than did South Arabia. Again, as in the case of Indian exports to the West, we have both Western classical and Tamil literary testimony as well as archaeological evidence for Roman goods exported to India.

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[30] For the location of Muziris see Schwartzberg (1978): 24 pl.III.C.5.

[31] On small boats see Paraṇar, *Puṟam* 343, lines 1-11 in Meile (1940):93ff; on pearls see *Madureikkāñji*, lines 133-138, in Meile; on precious gems see Nakkīrar, *PuṞam* 56, lines 17-20 in Meile (1940):103; on the *Kauṭīliya Arthaśāstra* see Trautmann (1971):169ff; on the Indian state system at this time see B. Stein (1980):23-24; on silk see *PME* 49, 56, 64; Clement of Alexandria, *Paedagogue* 2.10.107.3.

[32] See n. 6; J. A. Winter and H. C. Youtie (1944):249-258 discuss two papyri indicating use of cotton in Egypt in the second century A.D. See also N. Lewis (1983):53.

[33] For a discussion see Raschke (1978):649f. and nn. 994-995, 999-1000.

The Western sources mention numerous items exported to the subcontinent. Coral from the Mediterranean region was a major Indian import (*PME* 39; 49; 56; *Kauṭīliya Arthaśāstra* 2.11.42). It was, as Pliny (*NH* 32.11.21-23) relates, as highly valued among the Indians as Indian pearls were among the Romans. Pliny tells us that the coral—the best of which could be found off the coasts of Gaul, Sicily, Graviscas, Naples and Erythrae (*NH* 32.11.21)—had for the Indians powerful apotropaic qualities as well as artistic beauty (*NH* 32.11.23). Despite India's reputation for producing fine gem stones for export, some areas imported "topazes" from the West (*PME* 56). Perhaps these came from the island of Topazos in the Red Sea (*NH* 37.32.108) or from the Thebaid in Egypt (*NH* 37.32.109).

Pliny (*NH* 34.48.163) and the *Periplus* (49; 56) say that India imported copper and tin in exchange for its precious stones and pearls. Other Indian imports included antimony, realgar and orpiment. India also imported fine linens and ordinary thin and inferior sorts of cloth of all types (*PME* 48; 49), undoubtedly from Egypt which was a major manufacturing center of textiles.[34] A Tamil poem mentions lamps for illumination imported from the West and examples have been found in India.[35]

India also sought sweet clover, storax and crude glass from the West (*PME* 49; 56). The Roman trade station at Viranpatnam-Arikamedu provides archaeological evidence for the importation of glass to India. There is also a glass factory on the site. It is odd that crude glass should be imported to India form the West since Pliny states (*NH* 36.66.192) that India manufactured high-quality glass itself. Perhaps the Indians imported some of their glass in crude form from the West and reworked it into finer pieces after its arrival in the subcontinent. Arikamedu flourished as a port for Roman trade during the first and second centuries, but Indian inscriptions indicate that the site was still inhabited in the fourth century. Other Indian ports engaged in the Rome-India trade also flourished in the same period.[36]

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[34] For copper see Pliny, *NH* 34.20.94-34.38.137; for tin see Pliny, *NH* 34.47.156-34.48.163; for lead see Pliny, *NH* 34.49.164-34.54.176; for a discussion of realgar and orpiment see Pliny, *NH* 34.55.177-34.56.178; for Egyptian textiles see *P. Giess.* 40, 2, 16-29; A. C. Johnson, *ESAR*, 2:388; for Egypt as a cloth manufacturing center see A. H. M. Jones (1974c): 350-364; E. Wipszycka (1965).

[35] Meile (1940):114-115 cites *Mulleippāṭṭu*, V, 49 and 85 for Tamil references to lamps and also cites, *ibid.*, a find similar to a description given in Nakkīrar, Nedunalvādei, 101-102. For other Roman lamp finds from India see Wheeler (1946): 101-102; Casal (1949):31, 35-37; Cimino and Scialpi (1974): 20-21 cite an example with bibliography.

[36] On glass see Wheeler (1946):17, 95-102, who mentions the manufacture of beads at Arikamedu and the discovery of glass slag on the site. On the fourth-century habitation at Arikamedu see M. J. Filliozat (1947):117; G. Jouveau-Dubreuil (1940):448-450. For a reassessment and revision of Wheeler's dates for the founding and use of Arikamedu and for the Roman pottery from the site see the important article by V. Begley (1983):461-481. On some of the other Indian ports engaged in trade with Rome see Ramachandran (1980):90-140 and Nagaswamy & Abdul Majeed (1978): *passim;* see also Maloney (1975):13ff.

Alexandria and Sidon were large centers of glass industry in the West and, as we saw above, Quseir al-Qadim seems to have manufactured glass. Perhaps Myos Hormos, Berenice and other Egyptian Red Sea ports also produced glass, partly for local use, partly for export. Undoubtedly much of the glass exported to India passed through these Egyptian Red Sea ports, if it was not actually manufactured there.[37]

Indians acquired wines from the West. They consumed Laodicean and Arabian wines, but preferred Italian brands (*PME* 49; 56). Finds of Mediterranean amphorae at Arikamedu and other Indian ports substantiate the wine trade with India noted in the Periplus. Some of the Indian vessels found at Arikamedu have parallels at Quseir al-Qadim suggesting a trade link, direct or indirect, between these two ports.[38] The *Petr. Ostraca* cited above also suggest the existence of this wine trade between India and the West.

India imported some items for royal consumption only. At Barygaza these included silver vessels, singing boys, maidens for the harem, fine wines, fine thin clothing and ointments in small quantities (*PME* 49). The import of these ointments is curious. Undoubtedly the ingredients for them were imported to Egypt from India and Arabia for preparation and then re-exported to India for consumption.

Some items, not mentioned in the literary sources as imports to India are known only from archaeological evidence. Archaeologists discovered fine Italian made Arretine ware, Mediterranean rouletted and other types of Roman pottery at Arikamedu.[39] These may not have been mentioned in the literary sources because such imports were considered unworthy of mention or because "Romans" may have brought these ceramics with them or imported them for their own use. Possibly, too, some of the ceramics, such as amphorae or storage jars, were imported for their contents only and not for the containers themselves which would account for their not receiving mention in the literary sources.

Tamil literature also discusses imports, some of them not mentioned by classical texts nor attested archaeologically. While the Indian texts stress the export of pearls, pepper and precious gems to the Yavanas, their emphasis on imports from the Yavanas is not so much on goods, as on human services. Some of these services were servile, others apparently voluntary in nature. Tamil poets often praise the skills of the Yavanas. Tamil poems mention the use of Yavanas as guards and mercenaries in India. Two poems mention

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[37] On the glass, Roth (1979):144-181; Meyer (1982b):215-232.

[38] Wheeler (1946):41-45; W. R. Johnson and D. S. Whitcomb (1979b): 68-70; D. S. Whitcomb (1982a): 64, 67, 69.

[39] Casal (1949):35-37; Wheeler (1946):34-49. The Arretine ware from Arikamedu is given a Tiberian date by C. Goudineau (1968):312. It is given a late Augustan date by Raschke (1978): 663 and nn. 1329-1330 and by L. Ohlenroth (1952):389-392; cf. Begley (1983): 461-481.

Yavana carpenters in connection with the decoration of an Indian royal palace. There are praises for a Yavana statue of a woman.[40]

A frequently discussed import to India is Roman gold and silver coinage. The finds of Roman coins in India offer many areas for speculation. To date very few Roman republican coins have been discovered in India; the contexts in which they were found show that republican coins arrived in India only in the imperial period.[41]

Silver denarii of Augustus and Tiberius are the most numerous Roman coins from India. The quality of the silver in the Indian coin hoards of the Augustan-Tiberian period is good, which dispels the legend that numerous denarii found in India commemorating the caesars Gaius and Lucius, are nearly always plated.[42] The first through early third centuries are represented by gold aurei and denarii only. All issues seem to be imperial; very few Egyptian-issued Roman tetradrachms have been found despite the fact that most of the Roman coinage in India was probably shipped from Egypt, the only Roman province bordering the Red Sea until the annexation of Nabataea in A.D. 106. Despite apparent imperial restriction on the importation of denarii and aurei into Egypt—and those found there were used mainly by the Roman military—special dispensation may have been made to those intending to use imperial gold and silver issues in the Eastern trade. The Roman coins found in India occur in hoards and singly. Their importation is specifically referred to in the *Periplus* (49; 56). Little or no Roman bronze, brass or copper coinage is known from India prior to the fourth and fifth centuries.[43]

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[40] On imported human services to India see Schmitthenner (1979):94, 96; on mercenaries and guards see Nappūdanār, *Mulleippāṭṭu*, lines 59-62 in Meile (1940): 107ff; also *Cilappadigāram* 14, lines 66-67 in Meile (1940): 112; on carpenters see *Manimēgalei* 19, lines 107-108 in Meile (1940):115; Koṅguvēḷir, *Peruṅ-kadei* 1, 58, lines 40-44 in Meile (1940):116; on the Yavana statue see Nakkīrar, Neḍunalvâdei, lines 101-102, in Meile (1940): 114.

[41] Some of the literature on Roman coin finds in India includes: B. Srivastava (1964): 222-227; Wheeler (1951):360-367; Wheeler (1946):116-121; Wheeler (1954): 164 ff. A. H. M. Jones (1974b):144; Miller (1969):218-221; Warmington (1928): 280ff; P. L. Gupta (1969):169-180; A. Sarasin (1930):34-35; R. Sewell (1904):591-637 is especially thought provoking; Raschke (1978):630ff., 665-675; W. Schur (1923):52-53, 56-57; Rodewald (1976):48-51; C. K. Gairola (1955):282-291.

[42] Rodewald (1976):49, 119 n. 395 for a list of scholars proposing that some Roman silver coins from India were plated.

[43] Warmington (1928):295 claims that Alexandrian Roman tetradrachms have been found in India. I have found no substantiation for this. Raschke, (1978):668 and n. 1467 on shipment of coinage from Egypt. On Roman coinage in Egypt see A. C. Johnson, *ESAR* 2:424-445; L. C. West and A. C. Johnson (1944):78 n. 8 observe that a few Alexandrian Roman tetradrachms have been found in Ceylon, but none in India. On restrictions on the importation of foreign coinage into Egypt see A. C. Johnson, *ESAR* 2: 425 and n. 46, 428; S. H. Weber (1932):5. This Roman policy may have been an extension of a Ptolemaic one prohibiting circulation of foreign coins in Egypt for which see *P. Cairo Zenon* 59021. On Roman aes coinage in India see Sewell (1904):609ff.

The vast bulk of the coin finds are from South India, which offered the Romans the goods they desired. Few Roman coins have been found in North India. The Kushanas who dominated North India minted a gold coin which had the same weight as a Roman aureus. This leads us to speculate that the Kushana kings melted down Roman gold coins arriving in their territory and recoined them as Kushana issues.[44] However, we must provide another plausible explanation for the dearth of Roman denarii in the region: North India produced little that the markets of the Mediterranean wanted. The bulk of the coins from the south have been found on well traversed land routes connecting the Malabar and Coromandel coasts of India. Some of these find spots are within close proximity of the beryl mines whose products were so eagerly sought by the Romans. One perplexing problem is to determine whether these coins were treated as currency or bullion by the Indians. The presence of a slash mark across the face of the emperor on the obverse of most of the coins seems deliberate. The intention seems to have been either to test the purity of the metal or to relegate the coins to the status of bullion. Most authorities believe this practice indicates that the Indians viewed the coins as bullion, not currency. Why, then, not merely import bullion and save the trouble of minting the coins, the cost of which had to be borne somewhere along the line?[45] Perhaps the coins themselves represented small enough units of bullion that they were convenient in barter commerce much as the Maria Theresa thaler is today in East Africa.

After the initial period of direct contact between Rome and India in the reigns of Augustus and Tiberius, the period best represented in coin finds from India, Western traders may have felt that the Indians desired forms of bullion other than coins. The number of post-Tiberian issues found in India declined sharply. This may indicate that traders switched partly to other forms of bullion in their Indian commerce or relied increasingly on bartering Roman wares for Indian merchandise. However, Roman coins continued to be used in trade with India down to Caracalla's reign (A.D. 211-217). The Romans then continued to export coins in quantities for some time. Yet if we judge volume of the India-Rome trade solely by volume of the coin finds we will be badly misled. The literary evidence suggests that this trade expanded greatly in the first and second centuries. The presence of fewer numbers of second century coins, therefore, is no index of the volume of trade, for there is some indication that the Indians preferred certain issues. Such a preference might

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[44] On Kushana gold coins see Rawlinson (1916):164; P. Gardner (1966):120, 121, 122, 123.

[45] On North Indian markets see Rodewald (1976):48; on beryl mines see L. Gupta (1969): 172; on Indian treatment of Roman coins see Raschke (1978):667 n. 1425; Cary and Warmington (1963):98; J. Pirenne (1970):114; J. Schwartz (1960): 39. S. Bolin (1958):105 believes that early Roman imperial gold and silver coins were overvalued in relation to bullion. This would not have been so in India.

alter the evidence. The Augustan and Tiberian issues were, as noted above, especially popular. The Indians regarded highly the Augustan denarius with the reverse of the caesars Gaius and Lucius. Tiberius' issues are the most numerous from South India and indicate expanded trade after the Augustan period. The seated figure of Tiberius on the reverse of his denarii was also a popular type with the Indians.[46]

Frequently certain issues of coinage became popular beyond Roman borders to the exclusion of others—for example the Roman republican denarii serrati and bigati in Germany. The fact that Augustan and Tiberian issues were most popular in South India suggests that the first direct links with the Roman world occurred in this period, for it is most likely that the denarii concerned gained this popularity in or soon after the time of the emperors they portray. These earlier denarii also contained larger amounts of silver than the later issues. Even as early as Claudius (ruled A. D. 41-54) the denarius began to decline in weight and fineness. This may have been a factor in the popularity of the earlier issues. Perhaps Augustan and Tiberian issues were heavily represented in South India because they were selected by "Roman" merchants who preferred recent coins which were to be traded in an area where they were treated as bullion.[47]

Another possible index of increased trade between the Mediterranean world and South India is the change from almost exclusive use of denarii to almost exclusive use of aurei. This change occurred, after trade had been going on for over half a century, during the reign of Nero (A.D. 54-68). This shift in use from denarii to aurei may indicate an expanded demand in Western markets for Indian products suggesting payment for the increased volume in larger denomination coins.[48]

However, there is another possible cause for this shift from silver to gold coinage. In A.D. 63/64 the denarius was reduced in weight and debased to about 90% silver. Though the aureus also suffered a decline in weight under Nero, its fineness remained at the pre-Neronian levels.[49] Many Indians, who were apparently treating the coinage as bullion anyway, may have refused to accept the post-reform Roman silver. This forced Mediterranean entrepreneurs

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[46] On Roman coins in India see P. L. Gupta (1969):175; on Indian preference for Augustan-Tiberian issues see P. M. Fraser, (1972):I:184; on Indian preferences for Augustan denarii with the reverse depicting the caesars Gaius and Lucius see Rodewald (1976):49; on denarii with Tiberius seated on the reverse see Raschke (1978):666, n. 1397.

[47] Rodewald (1976):49; Wheeler (1954): 63-68; Tacitus, *Germania* 5.4.5 on Roman coins in Germany; Raschke (1978):667 and n. 1436 on the decline of the weight and fineness of the denarius under Claudius; on the Indian preference for Augustan-Tiberian issues see Rodewald (1976):120 n. 397.

[48] See Rodewald (1976):49-52; Schur (1923):39 also notes increased trade with India under Nero, but attributes it to the growing luxury of Nero's court.

[49] On the fineness of the aureus under Nero see H. Mattingly (1962):123.

to pay either in aurei, the easiest obtainable being the most recently minted Neronian issues, or in pre-Neronian silver, which became increasingly difficult to obtain. In the West, as current silver coins became increasingly debased, the older, finer issues tended to disappear from circulation to be melted down, treated as bullion, or hoarded. Thus barter or payment in aurei would be the only convenient alternatives. In any case, the decline in the number of Roman coins found in India after Nero need not indicate a decline in the India trade.

India may have ceased to import denarii before Nero's 63/64 reform. When Indian demand for Augustan and Tiberian denarii could no longer be met, the importation of denarii to India declined rapidly. Evidence from the Roman empire itself suggests that Augustan-Tiberian denarii did not remain in circulation long. Their heavier weight and greater fineness drove them out of circulation when lighter more debased issues appeared. Thus, they were no longer readily available for the Eastern trade. Yet one cannot discount continued payment, in post-Neronian times, in older denarii. A number of Roman hoards from South India containing both Augustan-Tiberian and Neronian, Flavian and Trajanic issues must have arrived in India after the Neronian reform. Merchants from Palmyra in A.D. 193 sought to obtain older aurei for their lucrative Eastern trade.[50] There is no clue which issues they preferred, but this practice of acquiring earlier coins of better weight and fineness for use in the Eastern trade cannot have been confined to Palmyrene merchants in the late second century. Undoubtedly those sailing from the Egyptian Red Sea ports in the immediate post-Neronian period did the same. In any case, the switch from payment in denarii to payment in aurei in itself does not necessarily indicate increased volume of trade, but rather may reflect the Indian preference for payment in aurei because of the debasement of the denarii.

Alternatively, the Roman government might have restricted the export of denarii, but not aurei. Gold was, for the Roman government, only a metal of account while silver was a metal used for the payment of troops. This was, by far, the government's greatest expenditure and there was probably difficulty in acquiring adequate quantities of silver for this purpose. The government may not have cared about "gold flow" and may have required Erythraean Sea traders to buy gold from the government with denarii to increase the government's silver supply. This seems one plausible explanation for the simultaneous decrease in use of Roman silver and increase in use of Roman gold in trade with India.[51]

Coin finds also indicate that the Romans favored different regions of India at different times. No coins after Tiberius appear from north of Mysore. From

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[50] Raschke (1978):666-667 and nn. 1416, 1430-1432; P.L. Gupta (1969):170-172; *IGRR* III. 1050: χρυσᾶ παλαιὰ δηνά⟨ι⟩ρ[ια].

[51] Oral communication from Prof. J. W. Eadie.

first century Roman coin finds we can see that Roman traders preferred ports of the Malabar (Toṇḍi and Muziris) and Coromandel (Korkai and Kaveripattanam) coasts, and especially Coimbatore and the beryl mines in that region. In the second century the Romans seem to have shifted trade activities from Chola territory in South India to Sātavāhana territory further north in the region of Sopara (Sūrpārka) and Barygaza on the west coast and areas north of the Coromandel coast on the east side. We do not know how intense Roman trade with the Sātavāhanas was in the second century, but it is clear that after Caracalla trade involving Roman coins ceased.[52]

Certain central Indian coin types also suggest trade activities. Sātavāhana, Pallava or Kurumbar coins of the first to third centuries depict two-masted ships and attest Indian maritime activities. Some of these lead coins struck by Śrī Pulumāvi and other rulers testify to the existence of seaborne commerce on the Coromandel coast in the early Christian centuries. This trade, implied by the coins, is amply attested in the literature of the period. We are puzzled, however, that while large quantities of Roman gold and silver coins have been found in South India, few, if any, Indian coins have been found in the Roman world.[53] The apparent failure of the South Indians, the Indians with whom the Romans traded most, to mint gold and silver coins—though some Indian rulers imitated Roman coins and produced silver punch-marked bar coins—may account for this phenomenon.[54] These imitations, bar coins and other base metal coinage minted by the Indians (*PME* 49) were of no interest to the Roman entrepreneurs.

This study reveals that barter was an important feature of Rome's trade with India. The Romans often traded their own goods for Indian merchandise they desired. Persius (*Satires* 5.53-55) mentions that in India one exchanged Italian wares for pepper and cumin. Pliny indicates (*NH* 34.48.163) that Romans traded copper and tin for Indian pearls and precious stones. Indian sources, too, stress barter with foreigners. The *Kauṭilīya Arthaśāstra* (2.16.18-19) advises merchants to use barter in their dealings with foreign traders or in foreign territory. Numismatic evidence cited above and the poem Tāyan-Kaṇṇanār, *Agam*, 149, lines 7-11 seem to show that coins, treated as commodities, were bartered for pepper and other wares desired by the Westerners.

Despite the dearth of statistics the literary and archaeological evidence suggests that Roman exports to India were, for the most part, bullion and need-

[52] On location of Roman coin finds in India see Gupta (1969):171-175; Sewell (1904):595, 599-600.

[53] E. J. Rapson (1908):lxxxii; R. Mookerji (1912):49-50. For other Andhra coins depicting ships: S. B. Deo (1962):174-175, fig. X; for foreign influences on Indian issues of the pre-Roman period see: A. N. Lahiri (1970): 35-42; see also Gairola (1955):282-291; on the dearth of Indian coins in the Roman world see Miller (1969):221.

[54] See Maloney (1975):19, 28; Pausanias 3.12.4.

oriented goods. We could not conclude this with regard to the Rome-South Arabia trade. We cannot determine whether Roman imports from India were mainly luxury goods or necessities.

*Rome-Ceylon Trade*

Mediterranean trade with Ceylon (Taprobane, Serendip, currently Sri Lanka) seems to have been indirect via India for the most part in the period from Augustus to the early third century. A Tamil monopoly with the island, as implied in the *Periplus* (59), may be partly responsible for this.[55] It seems likely that in the fourth century Indian mercantile hegemony over Ceylon no longer existed.

Pliny recounts (*NH* 6.24.84-85) the first direct contacts between the Roman world and Ceylon:

> We however have obtained more accurate information during the principate of Claudius [A.D. 41-54] when an embassy actually came [to Rome] from the island [of Ceylon]. The circumstances were as follows: Annius Plocamus had obtained a contract from the Treasury to collect the taxes from the Red Sea. A freedman of his was carried by gales from the north beyond the coast of Carmania while sailing around Arabia. On the fifteenth day he arrived at the harbor of Hippuros [in Ceylon], where he was entertained with kindly hospitality by the king. In six months' time he acquired a thorough knowledge of the language and afterwards he told of the Romans and Caesar. He [the local Ceylonese king], of all he heard, was remarkably struck with admiration for Roman honesty because of the money found on the captive [the freedman of Annius Plocamus] the denarii were all equal in weight although the different portraits on them indicated that they had been minted by several emperors. This so thoroughly moved him [the king] to friendship that he sent four ambassadors, with their leader Rachias.[56]

Two graffiti on the Coptos-Berenice road mention Lysas, a freedman of Annius Plocamus. However, the discovery of these graffiti has created a problem in dating the first trade contact, since they specifically date his passage on that road to July A.D. 6, and Pliny's account dates Lysas' voyage to Ceylon in the principate of Claudius. Various ways have been devised to explain this chronological discrepancy. Plocamus' tax farming contract in the "Red Sea" area might have lasted at least 35 years to explain the gap. Alternatively, that the embassies to Rome from Ceylon occurred in the reign of Claudius does

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[55] The Tamil monopoly is implied in *PME* 59; see Cary and Warmington (1963):100; B. J. Perera (1952):301 also suggests this; on Tamil invasions of Ceylon see É. Lamotte (1953):114ff.

[56] nobis diligentior notitia Claudi principatu contigit legatis etiam ex ea insula advectis. id accidit hoc modo: Anni Plocami, qui Maris Rubri vectigal a fisco redemerat, libertus circa Arabiam navigans aquilonibus raptus praeter Carmaniam, XV die Hippuros portum eius invectus, hospitali regis clementia sex mensum tempore inbutus adloquio percontanti postea narravit Romanos et Caesarem. mirum in modum in auditis iustitiam ille suspexit, quod paris pondere denarii essent in captiva pecunia, cum diversae imagines indicarent a pluribus factos. Et hoc maxime sollicitatus ad amicitiam legatos quattuor misit principe eorum Rachia.

not necessarily date Lysas' voyage to Ceylon at that time. It could have occurred much earlier. However, if the arrival of Lysas and the sending of the Ceylonese envoys to Rome are related, and they seem to be, there is a long interval between his arrival and their dispatch. The Annius Plocamus of the Coptos-Berenice road graffiti and of Pliny's story may not be one and the same: perhaps father and son? In any case, sometime in the first half of the first century the Mediterranean world established direct contact with Ceylon.[57]

Direct Roman imports from Ceylon in the first to third centuries were not extensive. However, some items such as pearls (*PME* 61) may have been traded indirectly via the South Indian emporia. Ceylon produced larger quantities of pearls than India and these, according to the *Periplus* (61) and Pliny (*NH* 6.24.81; 9.54.106), were especially prized. The Romans also imported semiprecious stones (*PME* 61), tortoise shell and muslins (*PME* 61).

In the second century Ptolemy (7.4) says that Ceylon produced rice, honey, ginger, beryl, amethysts, elephants and tigers. Unfortunately, the ancient sources do not record the prices of Ceylonese goods and are silent on Roman exports to Ceylon. Pliny's account of the freedman of Annius Plocamus indicates that Roman coinage was much admired and may have been imported, but evidence for importation of Roman coinage prior to the fourth century is limited to a few Roman denarii.[58]

Our slight knowledge of the Rome-Ceylon trade suggests that it was primarily a commerce in luxuries. We saw that this was not invariably the case with the Rome-India or Rome-South Arabia trade. The general tendency among scholars is to accept Pliny's assessment (*NH* 12.41.84) of Rome's Erythraean Sea trade as mainly luxury in nature.[59] It is evident from this discussion that this is not a totally accurate assumption. This study has shown that a sizeable, though statistically immeasurable, amount of this commerce comprised, at least by Roman aristocratic standards, necessities or common trade goods.

### *Cost of Trade Goods*

One problem we encounter in discussion of Rome's Erythraean Sea commerce is that of the prices of goods. There is no information from South Arabia, South India or Ceylon on what these regions precisely "paid" or exchanged for specific Roman commodities. This is due to lack of statistics and the fact that many, if not most, items were bartered. There is some evidence

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[57] D. Meredith (1953a): 38-40; F. F. Schwartz (1974b): 173-174; for a discussion of the Ceylonese embassy to Rome see F. F. Schwartz (1974a):33ff; E. Peiris (1960-1961):15-17; C. G. Starr (1956):27-30; Schmitthenner (1979):103; Trautmann (1971):182; A. Dihle (1978): 571; Kortenbeutel (1931):64 believes that Mediterranean contacts with Ceylon began only in the reign of Claudius.

[58] Wheeler (1946):121; Dihle (1978):571-573.

[59] See n. 6.

from the Roman world detailing the "costs" of merchandise imported from South Arabia and South India. Pliny, the ancient source on prices of some of the goods traded, carefully records costs for a variety of wares.

Pliny devotes considerable attention to frankincense costs. The best quality frankincense went for 6 denarii, second quality 5 denarii and third quality for 3 denarii a pound. In the late third century a papyrus (*P. Oxy.* 2144) indicates that ten cakes of frankincense cost 800 drachmae; unfortunately, their weight is unknown as is the exact date of the papyrus and therefore the purchasing power of the drachma. According to Pliny (*NH* 12.32.65) hucksters could realize a huge profit by the adulteration of spices and drugs including frankincense.[60] Prices for myrrh varied greatly, depending upon the quality. Wild myrrh fetched 3 to 50 denarii, "cultivated" 11 denarii, "Erythraean" 16 denarii and "other types" 16½ and 12 denarii per pound.[61] Pliny notes (*NH* 12.32.64-65) that a camel load of incense, once it reached the Roman borders, cost 688 denarii as a result of transport fees, dues, tolls, etc.

Pliny also details prices for pepper of which there were several varieties. Long pepper fetched 15 denarii, white pepper 7 denarii and black pepper 4 denarii per pound (*NH* 12.14.28). *Caveat emptor*, Pliny advises, for it was easy to adulterate long pepper with Alexandrian mustard or with juniper berries (*NH* 12.14.28-29). Its weight could also be tampered with, though Pliny does not explain how this was done (*NH* 12.14.29). Pliny says (*NH* 12.14.29) that in his day pepper was very popular. Pepper appears in nearly every recipe in Apicius' cookbook. It remained a popular commodity: in A.D. 408 the barbarian Alaric spared the city of Rome in return for a sizeable ransom which included 3000 pounds of pepper.[62]

Pliny also cites the prices of other commodities. There were four varieties of cardamom, which Pliny erroneously believed came from Arabia, that were exported from India. The best quality sold at 3 denarii per pound (*NH* 12.29.50). Ginger was also an important item for the Romans, but Pliny mistakenly believed that it came from Arabia and the Cave Dwellers' country rather than India. It cost 6 denarii a pound (*NH* 12.14.28). Indigo had medicinal qualities, allaying cramps and fits and drying up sores, and sold for 20 denarii per pound (*NH* 35.27.46). Costus sold for 5½ denarii a pound (*NH* 12.25.41). There were several varieties of Indian nard available to the Roman consumer. Prices depended on quality and as a fine perfume the best quality cost 100 denarii per pound (*NH* 12.26.42-43). Pliny lists lower-quality nard at 40, 60 or 75 denarii per pound (*NH* 12.26.44). Wood cinnamon cost 10 denarii per pound (*NH* 12.42.92). Pliny says that cassia, a shrub that grew near cin-

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[60] Adulteration of spices was apparently a common practice: A. C. Johnson, *ESAR* 2:340; A. Schmidt (1924):114ff.

[61] Pliny, *NH* 12.35.70; A. F. L. Beeston (1975b):4-8.

[62] J. B. Bury (1958):177.

namon, but in the mountains, had a wide price range, 5 to 50 denarii a pound (*NH* 12.43.95 and 97). Malabathrum varied in price from 1 to 400 denarii per pound while the malabathrum leaf sold for as much as 60 denarii a pound (*NH* 12.59.129). Genuine cinnabar sold for 50 sestertii per pound (*NH* 33.39.117). In some cases Pliny is not clear as to whether these were prices charged for the imported or the domestically produced varieties.[63]

Pliny recounts one story which reveals how greatly prices for certain commodities fluctuated. Discussing the South Arabian cinnamon market he says:

> The right of controlling the sale [of cinnamon] belongs solely to the king of the Gebbanitae who sells it by means of a market edict. Formerly the prices were 1000 denarii per pound, but this was raised by half as much again it is said after the forests had been burned by angry barbarians...[64]

We have no evidence that South Arabia produced cinnamon in antiquity; it was probably imported from India. Pliny must be referring to an import market in the Gebbanite kingdom which was a royal monopoly. The two prices Pliny quotes for cinnamon in South Arabia are many times that of any other item in his price list; therefore, they are suspect. The very high prices of 1000 and 1500 denarii may be copying errors. Alternatively, the prices may indicate that Pliny was not as accurate citing costs for commodities sold in foreign lands as he was for prices in a Roman market. The story does point out that an unexpected disaster to the cinnamon crop could increase its cost by 50%. This must have been true for other commodities as well. Suetonius (*Claudius* 18.2-19.1) indicates that a poor grain harvest in Egypt or Africa or damage by storm to the grain fleet, the *classis annonae*, could lead to severe shortages and inflated prices on the market in Rome. Thus, it is evident that prices for agricultural commodities could fluctuate considerably in antiquity due to weather or other natural or man-made disasters.

Welcome as Pliny's statistics are, we are not certain whether his figures are for retail or wholesale transactions. We cannot ascertain how much these prices differed from place to place or from earlier to later periods, though it is evident from the example above, that they did. A number of extant tariff lists regard the amount of tax levied on the import of Eastern goods: *P. Bodl. 60*, or mention that they should be taxed: the rescript of Marcus Aurelius and Commodus in *Dig*. 39.4.16.7. The Coptos Tariff (*OGIS* 674) is not a list of tax rates, but rates levied for use of one of the roads leading from Coptos to a Red Sea port. None of these lists helps establish retail or wholesale prices

[63] See Schmidt (1924):104-106 for a list of Pliny's prices for drugs of all sorts, not just those imported from the East.

[64] *NH* 12.42.93: Ius eius a Gebbanitarum rege solo proficiscitur; is edicto mercatu vendit. pretia quondam fuere in libras denarium milia; auctum id parte dimidia est incensis, ut ferunt, silvis ira barbarorum . . .

realized for Eastern goods.[65] Pliny's sources of information for these prices have been questioned. We might speculate that Pliny's detailed citation of prices for different qualities of frankincense, myrrh and nard and different types of pepper indicates some form of price regulation by the government, no copy of which survives.[66] If Pliny is, indeed quoting from a government decree this implies some government control of commerce and suggests that regulation was necessary to prevent prices from climbing too high; we are reminded of Diocletian's Edict of Maximum Prices two centuries later. It might also indicate that these commodities were not considered luxuries by the government, that is the aristocrats, or by other people buying them. There is seldom a need to regulate the price of luxuries. Necessities used for religious, funerary, culinary or medicinal purposes would, however, require such regulation. Pliny was a friend and counselor of the emperor Vespasian (ruled A.D. 69-79) and could have easily obtained such information from government records or simply by going to the market place. If this hypothesis is valid, we might take Pliny's citations as an index of maximum prices in his day only in the city of Rome.

*Volume of the Erythraean Sea Trade*

Knowledge of trade between the Roman world and the kingdoms of South Arabia is not as full as that between Rome and South India. However, this does not necessarily indicate that trade between Rome and South India was greater than that between Rome and South Arabia. Many scholars frequently cite two passages in Pliny:

> ...In no year does India drain off less than 50 million sestertii from our [Roman] empire.[67]

and:

> And by the lowest reckoning India, China and that peninsula [Arabia] take from our empire 100 million sestertii each year. That is the sum which our luxuries and our own women cost us. For what fraction of these imports, I ask, gets to the gods or to the lower world?[68]

as evidence for the volume of trade between Rome and South Arabia-India-Ceylon. Yet we must use these citations cautiously. Pliny's figures

[65] On Pliny's sources see Raschke (1978):669-670 and n. 1498; H. J. Loane (1944):21; Schmidt (1924):104-106; Warmington (1928):226-228.

[66] Loane (1944):21.

[67] *NH* 6.26.101: . . . nullo anno minus HS $|\overline{D}|$ [in some mss. HS $|\overline{DL}|$] imperii nostri exhauriente India. . .

[68] *NH* 12.41.84: minimaque computatione miliens centena milia sestertium annis omnibus India et Seres et paeninsula illa imperio nostro adimunt—tanti nobis deliciae et feminae constant; quota enim portio ex illis ad deos quaeso iam vel ad inferos pertinet?

may represent the value of goods expressed in currency and not indicate that currency was paid for them. As we noted above, barter was a popular means of commerce and the evidence does not indicate that the Romans "bought" imported wares.

Classical authors and archaeological evidence from the Roman empire, especially Egypt, attest imports from South Arabia, but information on Mediterranean exports to South Arabia is comparatively scanty. Strabo indicates (16.4.22) a lively trade with South Arabia at the turn of the Christian era and the volume seems to have increased subsequently. Strabo says (16.4.22) that the South Arabians disposed of aromatics and precious stones for silver and gold, but never traded their gold and silver with foreigners. Yet about fifty years later Pliny states (*NH* 12.38.78-12.39.78) that the South Arabians even imported foreign scents despite the fact that they grew much of their own. Perhaps the South Arabs paid for these imported products with gold and silver obtained, as Strabo tells us, in trade with the Roman world. Comparison of Strabo and Pliny suggests that some of the South Arabian kingdoms imported more in Pliny's day than previously. Some of these imports, including "foreign scents" may have been from the Roman world.

Pliny implies that Roman consumption of South Arabian products was substantial in the 60s and 70s. A.D. Despite this hyperbole, his descriptions of the funeral obsequies of Nero's consort Poppaea:

> Good authorities declare that [Arabia] it does not grow as large a quantity [of scents] as the princeps Nero had burned for his [wife] Poppaea at her funeral. Then calculate all the funerals conducted each year in the whole world and the scents that are given to the gods one grain at a time that are heaped up in honor of the dead bodies![69]

and the funeral of Felix, a prominent member of one of the circus factions:

> It was found in the official records that at the funeral of Felix, a charioteer of the Red Faction, one of his fans threw himself on the pyre—a pitiful story—and the opposing fans tried to prevent this score by asserting that the man had fainted due to the quantity of scents![70]

demonstrate that the Roman world—primarily, no doubt, the wealthy—consumed large quantities of incense in his time. Unfortunately, the passages are insufficient evidence for the exact volume of Roman imports from South Arabia. However, the citations may indicate that the relative volume of Roman imports from South Arabia was greater in his day than in earlier peri-

[69] *NH* 12.41.83: periti rerum adseverant non ferre tantum annuo fetu quantum Nero princeps novissimo Poppaeae suae die concremaverit. aestimentur postea toto orbe singulis annis tot funera, acervatimque congesta honori cadaverum quae dis per singulas micas dantur!

[70] *NH* 7.53.186; invenitur in actis Felice russei auriga elato in rogum eius unum e faventibus iecisse se, frivolum dictu, ne hoc gloriae artificis daretur, adversis studiis copia odorum corruptum criminantibus.

ods. There is no way, at present, for us to compare or gauge relative volume of Roman exports to South Arabia nor do later sources reveal anything directly about volume of trade.

Information on volume of trade between the Roman empire and South India is very sketchy. Scholars still debate the date for the establishment of direct sea commerce between the Mediterranean world and South India by use of the monsoons. Pliny tells us (*NH* 12.42.85ff) that in the pre-Augustan period an unknown, but certainly large, quantity of Indian goods arrived in the Mediterranean region via transshipment points in South Arabia. From there Arab caravaneers and shippers carried these goods to the Mediterranean via Nabataea and Egypt.[71] The direct sea route between India and the Roman Red Sea ports in Egypt was not exploited on a large scale according to Strabo (2.5.12; 17.1.13) until Augustus' time after which references to, and perhaps volume of this trade increased. Perhaps it was only in the reign of Augustus that merchants in the West first exploited on a large scale the monsoons which reduced travel time to and from India. No other reliable index of the volume of Rome's India trade exists. The quantity of goods traded between Ceylon and the Roman world in the first to third centuries is immeasurable, but seems to have grown in the fourth century on if we can judge by the greater number of coin finds and literary references mentioning the trade at that time.[72]

The belief that Rome suffered an unfavorable balance of trade vis-à-vis South Arabia and South India[73] is based on unreliable evidence: Pliny's complaints and Roman coin finds in India. This information is untrustworthy on two counts. First, there is no evidence in Pliny or any other ancient author of the idea of a balance of trade. A necessary concomitant to the balance of trade concept, that one country imports more from another than it exports, paying for the difference in currency, has no parallel in the Roman experience with South Arabia and South India. We have little evidence that Roman coin finds from South Arabia or South India were treated as anything other than

[71] On Arab shippers see G. W. Van Beek (1960b): 136-139; Hourani (1951):13-36; S. A. Huzayyin (1942):32 believes that the dessication of southwest Arabia forced the population to sea trade. Some Arabs were also pirates preying on trade. On this see H. A. Ormerod (1967): 258; Y. Janvier (1976b):346-347.

[72] For Roman coin finds from Ceylon see Miller (1969): 159; Wheeler (1951):370-371, 381; H. W. Codrington (1924); J. Still (1906-1907):161-190; Warmington (1928):120-123; Peiris (1960-1961):8-30. On the Ceylon-Rome trade from the fourth century on see K. A. Nilakanta Sastri (1976):141; Dihle (1978):571-573; M. P. Charlesworth (1951):134.

[73] This misconception is held by a number of scholars including Rawlinson (1916):102; Warmington (1928):38, 272, 274; Wallace (1938):255; S. J. de Laet (1949):303-304; Rostovtzeff, *SEHRE*: 67 does note that most of the trade was in goods, not coins; Basham (1968):232; Schwartz (1960):39; J. Hatzfeld (1919):183-184; Gairola (1955):286; A. H. M. Jones (1974b): 144; Lévy (1967):79; Carney (1973):91; J. Filliozat (1949):9; Miller (1969):23, 216; Thorley (1969):223; J. Desanges (1978):323; Raschke (1978):637, 650, 669, 671; cf. P. Veyne (1979): 211-244.

bullion, that is, another commodity. The second, and more important reason is that there are no statistics on volume of trade. Consequently we cannot estimate whether Rome imported more than it exported.

Calculating the volume of the Rome-South Arabia-South India-Ceylon trade is further handicapped by the ignorance of some of the classical authors who had an incomplete or inaccurate knowledge of the geographic origins of many of Rome's imports from those regions. Diodorus Siculus, Vergil, Propertius, Ovid, Strabo, Pliny, Seneca, Statius, Athenaeus and others were mistaken about the origins of some of the produce imported from the East, especially incense, spices and ebony. The geographic origin and method of production of silk was of particular interest to classical writers. While some realized that imported varieties originated in China and India and knew something of their mode of production, others were totally ignorant.[74]

This ignorance of the origin of some goods, in the case of the Augustan authors may have been deliberately fostered by the South Arabian middlemen to maintain their domination of the lucrative India-South Arabia-Egypt/Nabataea portion of the transit trade (*NH* 12.42.85-86). There was an evident attempt by the South Arabians to have the Westerners believe that many goods, if not exclusively Arab in origin, were available in South Arabia as well as India and China. Thus, the South Arabians were not only producers of certain goods demanded by the Romans, but also profited greatly from the India-South Arabia-Egypt/Nabataea transit trade, a trade they jealously guarded for themselves.[75]

On the other hand, the Augustan writers may simply have misunderstood that many goods entering the empire through Arabia were merely transshipped there from India, China and other points East and South. Certainly it is difficult for us to believe that the persisting "errors" about the origin of goods in the late first and subsequent centuries were due to the deceit of Arab middlemen. Romans had been trading directly with South Arabia and South India too long by that time to continue to be deceived.[76]

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[74] On silk production see *PME* 49, 56, 64; Clement of Alexandria, *Paedagogue* 2.10.107.3; Petronius, *Satyricon* 119; Martial, *Epigrams* 8.33; Athenaeus, *Deipnosophistae* 8.352; Pliny, *NH* 11.25.75-78; on ignorance of silk production see Seneca, *Hippolytus or Phaedra* 389; *Hercules Oetaeus* 666-667; Pausanias 6.26.6-8 (some truth, some misconception); Vergil, *Georgics* 2.121; Propertius 2.3.15; possibly Pliny, *NH* 6.20.54 (he may be referring to cotton here and not silk). See R. J. Forbes (1955):49-58; Raschke (1978):622ff; Rostovtzeff, *SEHRE*: 97 believes that silk was one of the most important imports to the Roman world. See also J. Thorley (1971):71-80.

[75] See n. 71; on Arab "deception" of Westerners see Propertius 2.3.15 on "Arabian" silk; 3.13.8 on "Arabian" cinnamon; Strabo 16.4.4; 16.4.19; 16.4.25 on "Arabian" cinnamon. Yet Strabo 15.1.22 was also aware that cinnamon grew in South India; Ovid, *Fasti* 3.719-720 on India as "an incense-bearing land"; G. W. Van Beek (1960a):91; Thorley (1966):218.

[76] Pliny, *NH* 12.30.51 believed that frankincense came only from Arabia and did not know that it also grew in East Africa; *NH* 12.14.50: cardamom from Arabia (it was only imported

There are two possibilities to explain the "errors" of some of the authors. Conceivably they were careless in checking their sources. The tendency among the classical authors to conflate places of origin—for example Ethiopia for India and Arabia—is well known and may be a source of some of the errors.[77]

Classical references to the location of "Arabia" are often vague, but improve during the first and second centuries. Arabia could refer to any area between the Euphrates and present day South Yemen. Diodorus Siculus (1.15.6) thought Arabia Felix was very near Egypt. Others were unsure which tribes or peoples comprised the "Arabs." Diodorus Siculus (3.46.1) considered the Sabaeans as Arabs while others distinguished between the two.[78] Strabo erroneously believed (16.4.21) that both the Nabataeans and Sabaeans dwelt in Arabia Felix.

Though Strabo cites (16.4.2-16.4.19) a number of towns and tribes conquered by Aelius Gallus and seems to have a general knowledge of the political-economic structure of South Arabia, a number of his geographical references cannot be located.[79] Claudius Ptolemy (5.16 and 18; 6.7) was the first to divide "Arabia" into three separate geographically defined zones. His long list of towns in Arabia Felix (6.7), a number of which are known, attest his superior geographical knowledge of the region compared to earlier periods.

India and Ceylon also suffered distortions of size and location in some of the sources. The *Periplus* was more precise in its descriptions of India than earlier or even some later accounts which relied on information from the Hellenistic era. In addition, an untitled and anonymous farce of perhaps the late first-early second century set in India (*P. Oxy.* 413) indicates a general popular knowledge of the place. Claudius Ptolemy's improvements (7.1-4) on Pliny and on the Indian sections of the *Periplus* attest a continued and expanded knowledge of India and Ceylon perhaps as a result of increased trade with those regions. Ptolemy was the acme of ancient geographical knowledge of India and Ceylon. No later ancient author improved on him.[80]

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via Media and Arabia); *NH* 12.14.28 on ginger from Arabia and the Cave Dweller's country (but ginger was only imported via these places); Statius, *Silvae* 4.5.30-32; 5.3.42-43 on "Arabian" cinnamon; Arrian, *Anabasis Alexandri* 7.20.2 on "Arabian" cinnamon; Seneca, *Tragedies, Oedipus* 117 on "Arabian" cinnamon groves; Dionysius Periegetes 939 on cassia from South Arabia and 945 on cinnamon from South Arabia; Yet Pliny, *NH* 12.41.82 says that cinnamon and cassia did not grow in Arabia Felix.

[77] On the conflation of geographical places see T. K. Joseph (1948):201-207. Also guilty of this conflation were Vergil, *Georgics* 4.293 on which see J. André (1949):157-163 and possibly Juvenal, *Satires* 6.466ff; for confusion of Arabs with Ethiopians see Pliny, *NH* 6.34.177; Athenaeus, *Deipnosophistae* 3.124 considered Petra as a capital of India!

[78] Bowersock (1983):1; on the location of Arabia see Strabo 16.1.28; Pomponius Mela 1.10.61; Herodian 3.9.3; Cicero, *De Domo Sua ad Pontifices Oratio* 47.124; on Arabs and Sabaeans see Valerius Flaccus 6.138-139; Vergil, *Aeneid* 8.704-706; Martial, *On the Spectacles* 3.

[79] Discussed further in chapter 5.

[80] Diodorus Siculus 2.35-42; Strabo 15.1.11-12; Pliny, *NH* 6.21.56-57 cites earlier sources on the size of India whose estimates vary significantly; Strabo 2.1.14 says Ceylon is "more than" 5000 stades long and in 15.1.14 he claims that it is 8000 stades long; for a second cent-

One reason for confusion of Indians with Arabs and Ethiopians maybe due to Indian traders spending many months in South Arabia and Ethiopia awaiting the monsoons that would carry them home. Hence the confusion among the Romans who thought Indians, Arabs and Ethiopians were one and the same on occasion. Some Indians were also dark-skinned like Ethiopians and could have been mistaken for Ethiopians or Ethiopians for Indians by some classical sources. Possibly, too, a number of Indians resided in South Arabia and Ethiopia for commercial purposes. The *Periplus* (30) says that Arabs, Indians and "Hellenes" lived on the island of Socotra (Dioscorida) in the Indian Ocean off the South coast of the Arabian peninsula and that they carried on trade there. This might also account for some of the confusion in classical accounts.[81]

Another source of confusion among classical authors may have been the interchange of agricultural information and transplanting of botanical species between South India, South Arabia and Ethiopia that resulted in the cultivation of a number of foreign plants of the same species in several diverse areas. This is implied in Columella (*De Arboribus* 1.3) and Pliny (*NH* 18.10.55), and would help explain such evident errors as "Indian" myrrh (*NH* 12.34.71), "Arabian" and "Cave Dwellers" ginger (*NH* 12.14.28), "Arabian" and "Sabaean" cinnamon (Statius, *Silvae* 4.5.30-32; 5.3.42-43), ebony from Ethiopia (Pausanias 1.42.5) and cardamom from Arabia (*NH* 12.29.50). Perhaps items like cinnamon were imported into Arabia in such bulk from India that the Western authors believed that they grew there. Thus, the sources suggest that certain imported species probably grew side by side with similar native species, in South Arabia, South India and Ethiopia. This exchange of technical information may have taken place in the Hellenistic period or before.[82]

Imported foreign plants and animals or species similar to them were also produced in the Mediterranean region in the Roman period.[83] The literary evidence suggests that, at least from the time of Augustus on, areas in the Roman empire itself produced incense, spices, silk, animals, etc. of Eastern origin and that the quantity and variety of these goods increased steadily throughout

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ury A.D. source relying on earlier Hellenistic information see Arrian, *Indica* 3.1-3.7ff; some observations on Ptolemy's accuracy may be found in E. H. Johnston (1941): 208-222; W. W. Tarn (1938): 231ff; Rawlinson (1916):130-136; Dihle (1978):575-576; J. P. Vogel (1952):226-234.

[81] On confusion see Filliozat (1949):7; F. M. Snowden (1970):2 and nn. 8-10; on foreign residents on Socotra see Raschke (1978):645 and n. 839; Schur (1923): 48 believes that there was a Roman merchant colony on Socotra, but evidence is lacking; R. W. Bulliet (1975):44 shows that Socotra also produced high quality frankincense. Therefore, foreign merchants residing there had easy access to this valuable commodity. P. L. Shinnie (1960):100-110 discusses an archaeological survey of the island in 1956.

[82] Van Beek, (1960a):80; Arrian, *Anabasis Alexandri* 7.20.2 says that Alexander the Great was excited by the prosperity of Arabia which included cinnamon; Strabo 15.1.22, citing Aristobulus, says that South India, South Arabia and Ethiopia all had cinnamon and nard.

[83] Miller (1969):110-111 also notes this.

the first century. Evidence for the second and third centuries is not abundant, but we can extrapolate from first century evidence, and some from later periods, the course of this later development.

The literary sources are vague in their identification of imported versus domestically-produced products. It is quite possible that similarity in appearance and utility between a number of native produced and imported goods led to similarity in nomenclature. In his list of diuretics—spikenard, saffron, cardamom, ebony, storax, cinnamon, cassia, myrrh, balsam, galbanum and ladanum—in the *De Medicina* (3.21.7), Celsus clearly points out that he is not referring to the plants native to and grown within the empire, but to those that were imported. We are not certain, however, whether Celsus means that these were autochthonous or whether they were grown inside the empire from seeds or cuttings obtained from imported stock.

Horace implies that in his day (*Epistles* 1.14.23) frankincense and pepper were not grown in the empire. Yet by the 60s and 70s A.D. Petronius and Pliny refer to the cultivation of pepper in Italy;[84] Pliny implies (*NH* 12.14.29) that this was a recent development. Vergil claims that only the Sabaeans cultivated the frankincense tree (*Georgics* 2.116-117). Pliny agrees with Vergil (*NH* 12.30.51), but Columella (*De Re Rustica* 3.8.4), a contemporary of Pliny, writes that frankincense trees grew in Rome in small gardens. Pliny, citing Juba's lost treatise, says that the Ptolemies introduced ladanum (*NH* 12.37.76) and the frankincense tree (*NH* 12.31.56) into Egypt and that the kings of Asia grew frankincense at Sardis. By the late second-early third century, frankincense seems to have been produced in Syria and elsewhere in the empire.[85] However, despite domestic production, the Romans continued to import these commodities in great quantities.

The bulk of the references to the cultivation of exotic products within the empire comes in the time of Nero and of the Flavians (A.D. 69-96), a period represented by many coins from excavations at the Red Sea port of Quseir al-Qadim.[86] This suggests a period of expanded commercial activity at the port at a time when the sources indicate growing interest in foreign commodities. This is also the era when the switch from silver to gold is evident in Roman coin finds from India and when a larger volume of imports from India has been postulated. According to Pliny (*NH* 2.45.118; 2.47.125) it was at this time that trade with both South Arabia and India was booming.

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[84] Petronius *Satyricon* 38; Pliny *NH* 12.14.29; 16.59.136.

[85] Athenaeus, *Deipnosophistae* 2.66 speaks of "Libyan" pepper; on the question of the cultivation of the frankincense tree in Egypt see D. M. Dixon (1969):55-65 and F. N. Hepper (1969):66-72; on growing frankincense at Sardis see Pliny, *NH* 12.31.57; 16.59.136; whether Egypt still produced frankincense in the Roman period is uncertain; on the production of frankincense in Syria in the late second-early third century see Athenaeus, *Deipnosophistae* 1.27; 3.101; 15.684.

[86] S. E. Sidebotham (1986): forthcoming.

Columella and Pliny the Elder are the best evidence for the seeming proliferation of the cultivation of exotic products within the empire. There is evidence of exchange of agricultural information, techniques and products between India, South Arabia and the empire in the 60s and 70s A.D. Columella talks (*De Arboribus* 1.3) of the difficulty of inuring foreign plants to Roman soil. Dionysius Periegetes (1126) refers to Indian millet and Pliny describes (*NH* 18.10.55) a millet introduced into Italy from India within the last ten years which was very prolific. Pliny also mentions (*NH* 18.13.71) cultivated and wild barley from India suitable for making good bread and porridge. Erysimum, a grain resembling barley, was found in Asia Minor and Greece. Pliny does not say why horminum, a grain native to the empire, was sown with gingelly (*NH* 18.22.96). Undoubtedly the two sown together produced some type of hybrid of good quality and high yield. Pliny mentions that Arabia prepared a fine quality ladanum which checked looseness of the bowels when mixed with other items. A certain kind identified by Pliny (*NH* 26.30.47) was also found in his day in Syria and Africa.

By the 60s and 70s A.D. saffron, cassia, galbanum (Columella, *De Re Rustica* 7.4.6), and possibly cinnamon, rice, originally an Indian product, nard of various types, frankincense (Columella, *De Re Rustica* 3.8.4), myrrh (Columella, *De Re Rustica* 3.8.4), opals (*NH* 37.46.130), amethysts (*NH* 37.40.121), other stones (*NH* 37.23.87ff), cinnabar from Ephesus (*NH* 33.39.117), malabathrum (*NH* 12.59.129), lycion (*NH* 12.15.31), possibly cotton[87] and a variety of other products seem to have been regularly obtainable from various parts of the empire. By that time, Columella writes (*De Re Rustica* 3.8.5) that the empire produced most of the items originally imported from the East.

According to Statius (*Silvae* 4.9.12), by the late first-early second century incense and pepper were produced on the Nile. We cannot determine whether Statius means that these items were actually grown in the region of the Nile or merely transshipped there via the Egyptian Red Sea ports and Coptos. Athenaeus[88] speaks of Syrian myrrh, frankincense and cassia and of spikenard from Tarsus. Tacitus (*Hist.* 5.6), Josephus (*AJ* 9.7; 15.96), Strabo (16.2.41) and Plutarch (*Antony* 36.2) mention the cultivation of balsam in Judaea and Syria.

[87] On saffron see Pliny, *NH* 21.17.31-34; Celsus, *De Medicina* 6.6.25C; Columella, *De Re Rustica* 3.8.4; on cassia see Celsus, *De Medicina* 6.6.24 and Columella, *De Re Rustica* 3.8.4; on cinnamon see Columella, *De Re Rustica* 6.5.3; there was also a variety of wild cinnamon according to Columella, *De Re Rustica* 9.5.6; Pliny, *NH* 24.61.102 says that cinnamon was used as a medicine, but that a double dose of brathy, an item found in Greece, equalled one dose of cinnamon; on nard see Celsus, *De Medicina* 5.23.1B for Gallic and Syrian nard; 5.23.2 and 6.6.6 for Indian nard; *NH* 12.27.47 for Thracian nard; *NH* 13.2.16 for a list of species resembling nard, yet their findspots are not recorded; *NH* 21.19.43-44 for Celtic nard; *NH* 21.19.43 for nard from Pannonia, Noricum, the Alps and from the city of Eporedia; Tibullus 3.6.63 on nard from Syria; on cotton see A. C. Johnson, *ESAR* 2:3, 515.

[88] *Deipnosophistae* 4.131; 14.651; 15.688.

There is also evidence for the breeding of exotic animals within the empire. Columella (*De Re Rustica* 3.8.3), Pliny (*NH* preface 28) and Aelian (*De Natura Animalium* 2.11) imply that elephants were bred domestically, and, indeed the emperor Claudius (ruled A.D. 41-54) owned an elephant farm in South Italy, but Juvenal (*Satires* 12.102ff) seems to think not. Peacocks may also have been domestically bred. Animals—lions, tigers, hippopotami, leopards, rhinoceroi, etc.—regularly featured in the games were obtained from various regions both within the empire and from without. Although there is little evidence, we might speculate that these, like the elephant, were bred in captivity, perhaps in or near major cities that sponsored games.[89]

Thus, the evidence indicates that during the reign of Augustus entrepreneurs produced exotic animals and plants—or their closest native equivalents—within the empire. By the time of Tiberius and especially in the period of Nero and the Flavians, there was extensive production of exotic plants and animals within the empire.

There is some evidence from the late second-early third centuries concerning trade. Despite his habit of confusing Arabs in the Mesopotamia region with those of Arabia Felix, Herodian indicates (3.9.3) that there was trade with South Arabia:

> ... It [Arabia] bears the name Felix/Happy because it produces aromatics and incense which we use.[90]

However, there is no evidence for the continued transplantation of agricultural products between Rome and South Arabia-South India-Ceylon in this period.

An important question now arises. If most or all of the products which Rome required from the East were eventually produced within the empire itself, why

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[89] On elephants see Toynbee (1973):35 who notes that the Carthaginians got their elephants mainly from the Atlas region of northwest Africa and from the Fezzan (347 n. 3). Perhaps this continued to be a source for the Romans. See also Scullard (1974): *passim*. Toynbee, 37, mentions a Roman state-owned herd of elephants in Julius Caesar's time and discusses, 46f., the hunt mosaic at Piazza Armerina which shows the capture of elephants in Africa and their shipment to Rome. R. Meiggs (1982):330 notes an elephant farm in South Italy during the reign of Claudius. J. Deneauve (1969):121, no. 372 lamp depicting an elephant head; Africa personified: 169, no. 727; 170, no. 728; 193, no. 908. This must indicate that elephants were obtainable in North Africa. On peacocks see Athenaeus, *Deipnosophistae* 14.655 who says that they were bred on Samos; see also Columella, *De Re Rustica* 8.5.10; 8.11.4-9; possibly Varro, *De Agricultura* 3.2.18; Toynbee (1973):250, 395 n. 122 also believes they were bred, but does not mention games specifically and cites Varro, *Saturae Menippeae* 13 as evidence. On animals in entertainment see Toynbee (1973):16, 18. For more on animals in antiquity in Ptolemaic, Roman and Byzantine Egypt see H. Raïos-Chouliara (1981):45-88, 267-293. In public entertainment, including games, horse-races, etc., animals played their most dramatic role in ancient life. The quantity of animals used in such events grew rapidly from the time of Augustus on.

[90] Herodian 3.9.3 ...καὶ τὴν εὐδαίμονα 'Αραβίαν· φέρει γὰρ πόας εὐώδεις, αἷς ἀρώμασι καὶ θυμιάμασι χρώμεθα.

did the imports continue? There are several possible reasons, although positive evidence is lacking. The novelty and snob appeal of imported goods is typical in most societies as Pliny (*NH* 12.38.78) and Pseudo-Lucian (*The Cynic* 8) note when referring to the South Arabians. There is the possibility, too, that the imported goods were either of a better quality or different variety. This is implied in the various types of nard which are mentioned by several ancient authors.[91] Perhaps the medicinal qualities of the plants varied according to their place of origin. Some of the Indian and South Arabian species may have been superior in this respect and thus continued to be imported.

Alternatively, imports of expensive Eastern counterparts may have continued because the domestic supply was not sufficient to meet the demand. Conversely, because imports alone were insufficient to meet domestic demand, many of the products were domestically produced. In either case, imports continued to supplement domestic production to meet growing domestic demand. This is implied by Pliny in his references to the funerals of Poppaea (*NH* 12.41.83) and Felix, the charioteer (*NH* 7.53.186).

*Conclusion*

Study of the type, cost and quantity of items traded between the Roman world South Arabia, South India and Ceylon allows us to draw some conclusions about this aspect of Rome's Erythraean Sea commerce. The belief held by many scholars that this trade was basically one of luxuries must be qualified by the literary evidence of Ovid, Propertius, Tibullus, Celsus, Columella, Pliny, and Statius who, as aristocrats, viewed many of the imports into the Roman empire as necessities. In this light, while one must consider imports of pearls, precious stones, ivory and animals as luxuries, much of Rome's imports seems to have been plants and plant products which served basic religious, funerary, culinary and medicinal requirements of ancient life.

Pliny's citations might suggest some type of government price regulation on the sale of herbs, spices and aromatics. He notes none on the sale of pearls, ivory, precious stones or animals. Luxuries do not require price regulation, necessities of life often do. Perhaps Pliny's prices are further evidence that much of Rome's imported wares from the East were considered necessities by Roman aristocratic standards. Yet the costs Pliny records for commodities, except in the smallest quantities, would have been beyond the means of most of the population. In addition, Pliny's prices are probably relevant only to the city of

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[91] On imported and domestically produced wares see Lucian (?), *The Fly* 1; Pliny, *NH* 12.15.30: the best lycion is from India, but the plant producing it also grew on Mt. Pelion in Greece; *NH* 12.46.100-102: the best behen-nut for perfume and medicine is from Petra; *NH* 27.5.14: the best aloe is "from India, but it also grows in the province of Asia." For nard see n. 87.

Rome in his day. Some of his figures reveal that disasters to crops could result in substantial cost increases.

It is difficult to estimate the volume of the Erythraean Sea trade in either Roman imports or exports. Literary and archaeological evidence seems to reveal that trade volume was greater in the period from Augustus to the early third century than in earlier and later periods. Regular direct maritime trade links between South India and the Mediterranean world were established in the reign of Augustus. Direct links with South Arabia had existed for some time, but were now strengthened. Strabo says (2.5.12; 17.1.13) that a greater number of ships sailed to India in his day than in Ptolemaic times. This implies to us that the volume of this trade was substantially increased over earlier periods. Perhaps this increased trade was due, in part, not to the discovery, but to the increased use of the monsoons—long known to the Indians, South Arabs and Ethiopians—by inhabitants of the Mediterranean world in the time of Augustus.[92] Pliny seems to indicate that this trade was greater in his day than earlier.[93] The *Periplus*' and Ptolemy's increased geographical knowledge of both South Arabia, South India and Ceylon may suggest that trade between those regions and the Roman world expanded from the levels of Pliny's day. However, information from later periods sheds no light on this issue. The basic question of fluctuations in the volume of trade suffers from the lack of statistics. Consequently, we must doubt if valid estimates on trade volume can ever be calculated.

Evidently from Augustus on there was an effort made to produce within the empire many of the products imported from South Arabia, South India and Ceylon. This trend continued in the period of Nero and the Flavians, but can be detected later as well. The production of commodities like frankincense, myrrh, pepper, nard, etc. inside the empire may indicate increased Roman demand for these necessities which the volume of imports could not meet. Alternatively, snob appeal, superior quality or different variety of imported wares vis-à-vis domestic counterparts may have been reasons for their continued importation.

The belief held by many scholars that Rome had an unfavorable balance of trade vis-à-vis South Arabia, South India and Ceylon is indefensible because of the dearth of any statistics on trade volume. Furthermore, there is no evidence that the Romans applied the concept of balance of trade to their Erythraean Sea commerce.

The third century economic crisis led to decreased Roman commercial activities in the Erythraean Sea. From that time on the kingdom of Axum, in

[92] The monsoons were probably discovered earlier than the time of Augustus by Westerners, but it was only in the time of the first princeps and his successors that the monsoon was exploited on a large scale. For a discussion see L. Casson (1980b):21-36.

[93] Pliny *NH* 7.53.186; 12.41.83.

modern day Ethiopia, was the predominant power in the region. We have no evidence for the revival of Rome's Erythraean Sea commerce until the later fourth and subsequent centuries.[94] However, this later trade seems to have been in the hands of Arab and Axumite middlemen and never reached the proportions achieved in the first and second centuries.

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[94] On the fourth century revival of Rome's Eastern trade see Rawlinson (1916):137, 147-149; Cary and Warmington (1963): 107; H. Kortenbeutel (1931):75-76; J. T. Reinaud (1863):290-297; on the rise of Axum see A. Dihle (1965):20. It was in the third century that Axum began to mint its own coins. This may be indicative of her newly won status as a major trading power in the Erythraean Sea.

## CHAPTER THREE

# FACILITATING THE COMMERCE: ROADS, PORTS AND CANALS FOR THE EXPANDING ROMAN TRADE

Construction of ports, roads, canals and warehouses in the Roman empire sheds light on Roman economic, political and military policy in the Erythra Thalassa. Increased maritime trade between South Arabia, South India, Ceylon and the Roman empire compared to earlier times necessitated internal improvements. The fabrication, enlargement or repair of facilities handling commerce, especially in Egypt, Judaea and Nabataea/Provincia Arabia aided the flow of goods between South Arabia, South India, Ceylon and the empire and east-west within the empire itself. Using archaeological—including epigraphic, papyrological, numismatic—and literary evidence, we will examine who built, paid for and/or sponsored these works and how they facilitated this trade.

We will consider only those facilities built primarily for Rome's Erythraean Sea trade. All road, canal and harbor construction or repair in Italy and elsewhere aided trade, but we will not discuss these other regions here. Most of these installations facilitated empire-wide, fundamentally internal, trade and not that mainly from the Erythraean Sea region.

We could approach the subject of internal improvements promoting Rome's Erythraean Sea trade topically. This would require a separate study of each type of improvement—ports, roads, canals, etc.—regardless of where or when each was built. However, a topical approach treats geographically disparate regions simultaneously and violates the chronological progression which elucidates interpretation of the evidence. On the other hand, a strictly chronological treatment of internal improvements inevitably ignores the date of construction or repair of several of the ports involved in this trade and violates geographical boundaries, considerations which might facilitate discernment of economic policy in the Erythraean Sea area. Both avenues of investigation in themselves, the topical or chronological, are unsatisfactory. Thus this discussion follows, as much as possible, a chronological progression in a topical framework within a particular geographical area.

### *Egypt*

Much of Rome's maritime trade with South Arabia, South India and Ceylon flowed through the Egyptian Red Sea ports to Alexandria, Egypt's major outlet to the Mediterranean basin. Strabo says (2.5.12) that in the reign of Augustus, soon after the annexation of Egypt, Roman maritime trade with these regions was greater than in earlier times:

> ...Now one hundred twenty ships sail from Myos Hormos to India. Before, under the Ptolemaic kings, only a few vessels undertook to sail there and carry back Indian merchandise.[1]

and (17.1.13):

> Formerly not twenty ships dared to cross the Arabian Gulf far enough to look outside the Straits [Bab el-Mandeb]. Now large fleets are sent as far as India and to the furthest ends of Ethiopia from which the most valuable cargoes are carried to Egypt.[2]

This increase in maritime activity may have been due, in part, to increased use of the monsoons by western merchants sometime in the reign of Augustus. The monsoons had long been known among the Arabs, Indians and Ethiopians, but it was only in the Ptolemaic period that westerners first used them, and then only on a limited scale.[3]

We possess some, albeit limited, archaeological and literary evidence concerning the Egyptian Red Sea ports engaging in this trade. Only two of the ports, Clysma-Suez and Quseir, have been partially excavated. Nineteenth and early twentieth-century travellers' reports and surveys of the Egyptian Eastern Desert give some information on the Red Sea ports, but they raise more questions than they answer. The literary evidence is often inaccurate, conflicting with other testimony, or incomplete. Taken together, however, the archaeological and literary information does reveal some aspects of Roman activity in the region.

According to Claudius Ptolemy (4.5), a second century geographer who worked at Alexandria, there were six ports along this coast. From north to south they were Arsinoë (Clysma-Suez), Myos Hormos, Philoteras, Leukos Limen (Quseir al-Qadim), Nechesia and Berenice. However, Strabo and Pliny do not agree with Ptolemy on the location of some of these ports. Strabo (16.4.5) places Philoteras north of Myos Hormos. Pliny (*NH* 6.33.168) equates Aenum with Philoteras and also places it north of Myos Hormos. The University of Alexandria conducted excavations at Wadi Gasus 57-58 km. north of modern Quseir in 1976, but discovered only a Middle Kingdom port. Sherding the site in 1980, I found no evidence of Roman habitation. However, 2-3 km. south of the Middle Kingdom port, at Kibda Bay, there is a perfect anchorage, topographically similar to Quseir al-Qadim. Unfortunately, we had no permit to

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[1] ...ἑκατὸν καὶ εἴκοσι νῆες πλέοιεν ἐκ Μυὸς ὅρμου πρὸς τὴν Ἰνδικήν, πρότερον ἐπὶ τῶν Πτολεμαϊκῶν Βασιλέων ὀλίγων παντάπασι Θαρρούντων πλεῖν καὶ τὸν Ἰνδικὸν ἐμπορεύεσθαι Φόρτον.

[2] πρότερον μέν γε οὐδ' εἴκοσι πλοῖα ἐθάρρει τὸν Ἀράβιον κόλπον διαπερᾶν, ὥστε ἔξω τῶν στενῶν ὑπερκύπτειν, νῦν δὲ καὶ στόλοι μεγάλοι στέλλονται μέχρι τῆς Ἰνδικῆς καὶ τῶν ἄκρων τῶν Αἰθιοπικῶν, ἐξ ὧν ὁ πολυτιμότατος κομίζεται Φόρτος εἰς τὴν Αἴγυπτον.

[3] See Chapter One.

survey this area. Could Kibda Bay be the location of a Ptolemaic or Roman port mentioned by one of these geographers? Myos Hormos and Berenice were the most important ports. The locations of Philoteras and Nechesia are debated. Their names suggest Ptolemaic foundations and these ports may have enjoyed some prosperity in that period. Other classical references indicate that not all of these ports were of equal size or importance in Rome's Arabia-India-Ceylon trade, and it is uncertain whether Philoteras and Nechesia functioned in the Roman period.[4]

Strabo (2.5.12; 16.4.24; 17.1.45), Pliny (*NH* 6.26.102-103), and the *Periplus* (1; 19; 21) indicate that Myos Hormos and Berenice were the most important Red Sea ports in the first century. They say little or nothing about other ports in this period. Diodorus Siculus (3.39.1-2) cites Agatharchides on Myos Hormos:

> At the edge of the mountains there lies a harbor known as Aphrodite's which has a winding entrance. Lying off this harbor are three islands two of which have many olive trees and thick shading. One of these islands has less trees than the other two, but has many birds called guinea-fowls.[5]

and Strabo notes Artemidorus (16.4.5):

> Then one arrives at Myos Hormos which is called Aphrodite's harbor. It is a large harbor with a winding entrance. Three islands lie nearby, two are thickly shaded with olive trees. The third island is less densely shaded and is full of guinea-fowls.[6]

The two descriptions are similar and must refer to the same port. Based on a description in Pliny (*NH* 6.33.168), some scholars locate Myos Hormos near Abu Sha'ar el-Qibli:

> ...then desert extending as far as Myos Hormos where there is the spring Ainos.[7]

The disembarkation at Myos Hormos of Aelius Gallus' army, returning from Arabia in 25 B.C. (Strabo 16.4.24), suggests that the port was important in Augustan times for Strabo (17.1.45) says that it was a city possessing a naval station for sailors.[8] The *Petr. Ostraca* from Coptos, the Nicanor family business archive detailing receipts for goods sent to the Red Sea ports between 6 B.C. and A.D. 68/69, indicate that both ports engaged in a lively business: thirty of

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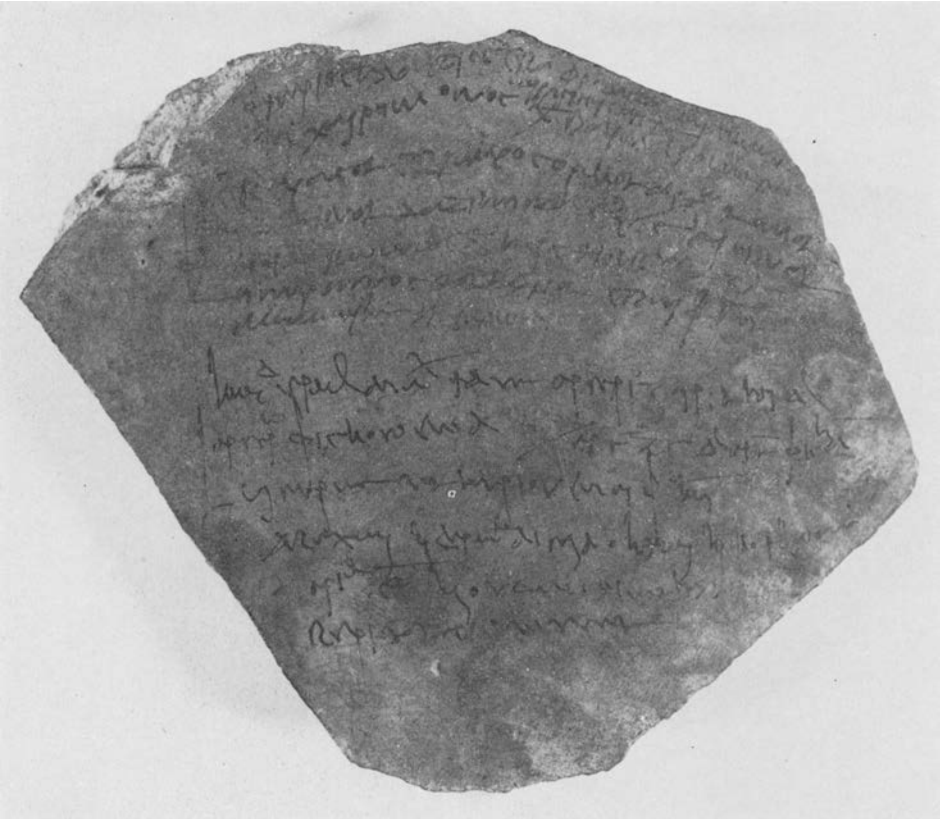
[4] J. Ball (1942):183-185; D. Meredith (1952):105; J. Desanges (1978):269-270.

[5] ὑπὸ δὲ τὰς ἐσχατιὰς τῆς ὑπωρείας κεῖται λιμὴν σκολιὸν ἔχων τὸν εἴσπλουν, ἐπώνυμος Ἀφροδίτης. ὑπέρκεινται δὲ τούτου νῆσοι τρεῖς, ὧν δύο μὲν πλήρεις εἰσὶν ἐλαιῶν καὶ σύσκιοι μία δὲ λειπομένη τῷ πλήθει τῶν προειρημένων δένδρων, πλῆθος δ' ἔχουσα τῶν ὀνομαζομένων μελεαγρίδων.

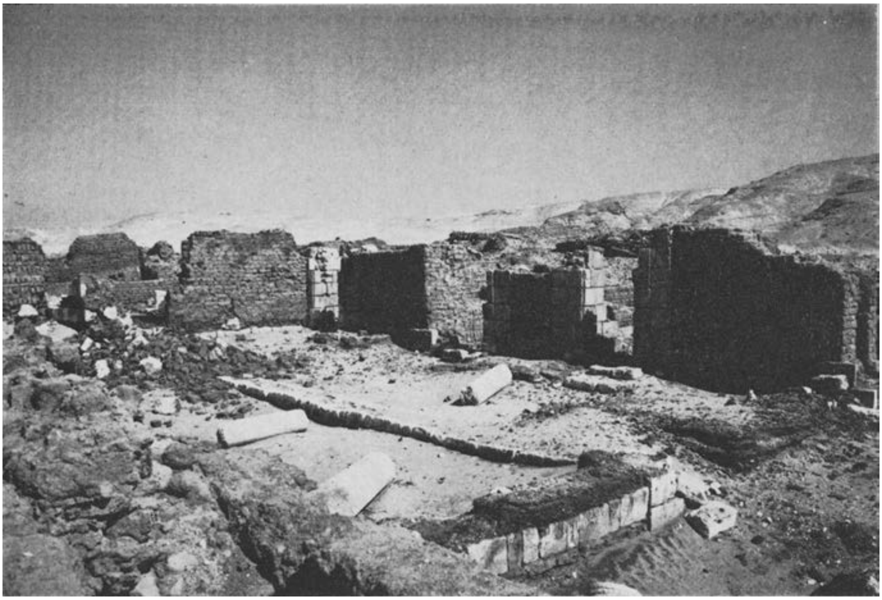
[6] εἶτα Μυὸς ὅρμον, ὃν καὶ Ἀφροδίτης ὅρμον καλεῖσθαι, λιμένα μέγαν, τὸν εἴσπλουν ἔχοντα σκολιόν· προκεῖσθαι δὲ νήσους τρεῖς, δύο μὲν ἐλαίαις κατασκίους, μίαν δ' ἧττον κατάσκιον, μελεαγρίδων μεστήν....
G. W. Murray (1925):141; C. H. O. Scaife (1936):66-68.

[7] ...mox deserta ad Myoshormon, ubi fons est Ainos...

[8] πόλις ἔχουσα τὸ ναύσταθμον τῶν πλοϊζομένων



1. *Petr. Ostracon* no. 290: mentions Tiberius Claudius Epaphroditus, dated 22 July A.D. 62
(Courtesy of Petrie Museum, University College London, U. C. 31917)

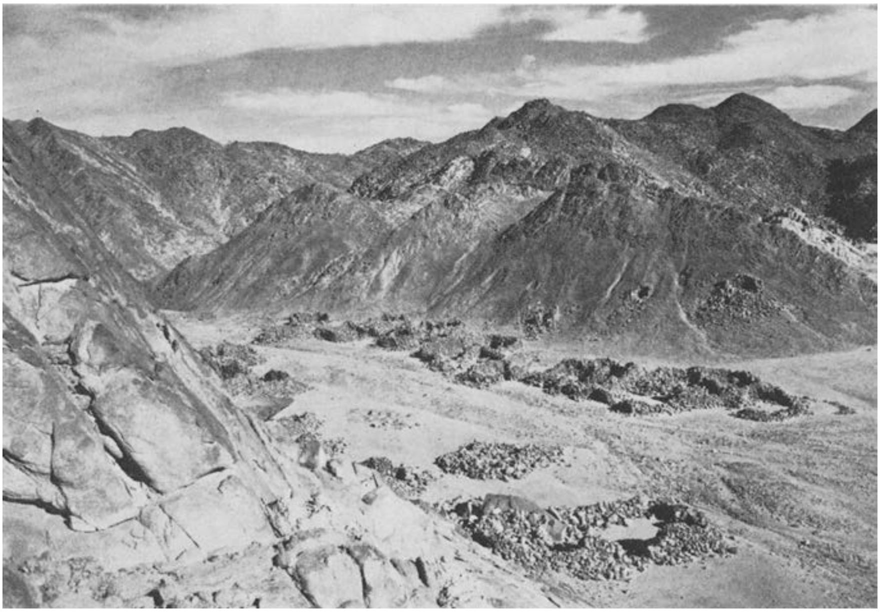


2. Antinoë, Egypt: remains of houses (Photograph by the author)

3. Wadi Hammamat, Egypt: modern road and ancient quarry site (Photograph by the author)

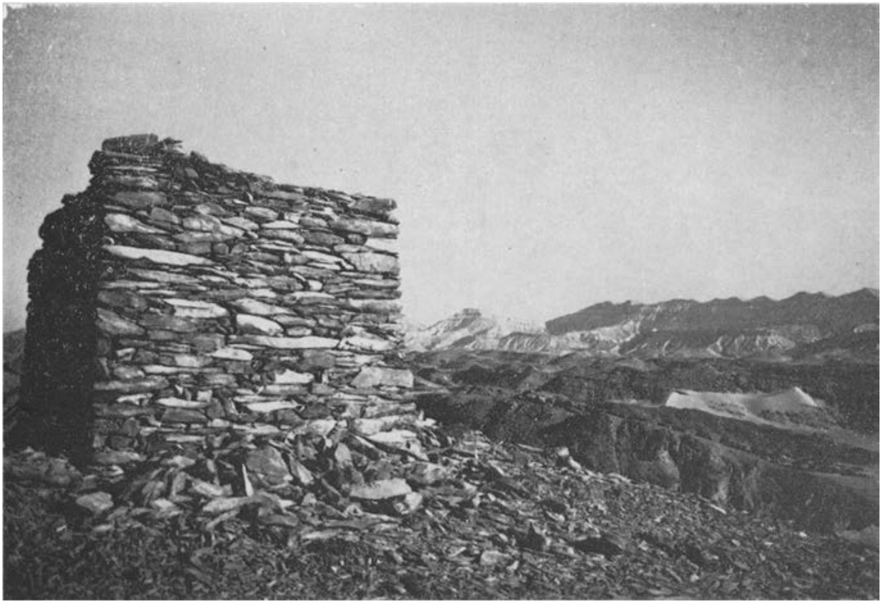
4. Eastern Desert, Egypt: *hydreuma* on the Coptos-Quseir road (Photograph by the author)

5. Mons Claudianus, Egypt: barracks for Roman garrison and animal lines (Photograph by the author)



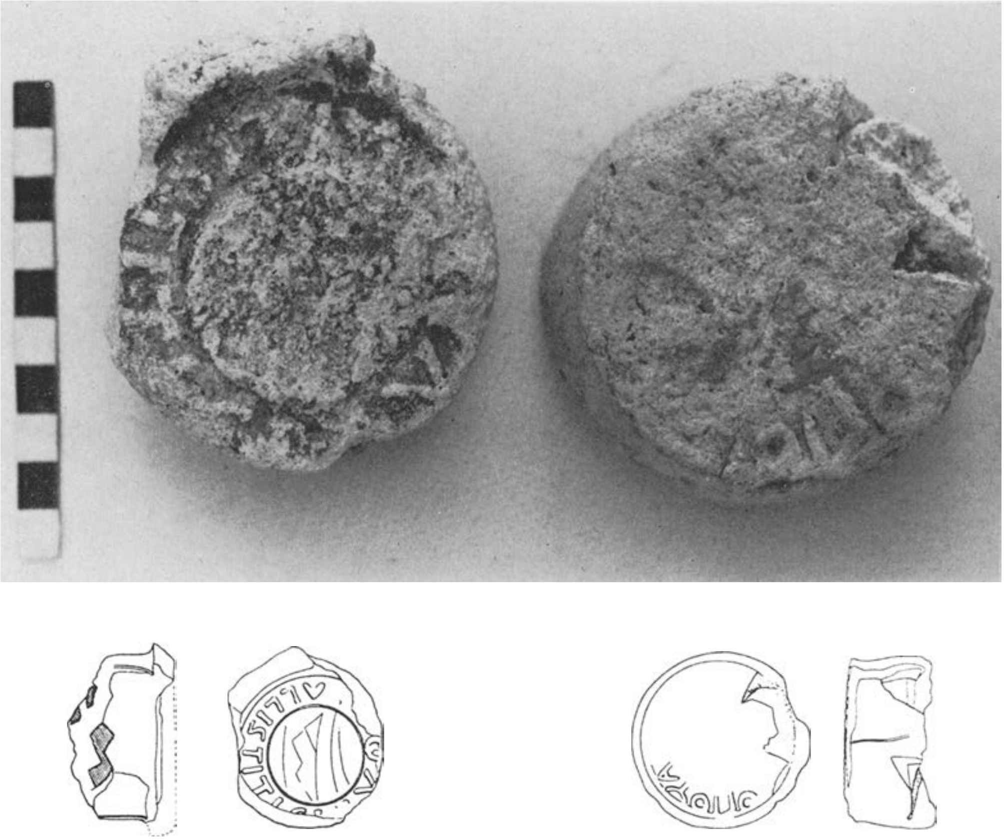
6. Fawakhir, Egypt: mining camp just off the Coptos-Quseir road (Photograph by the author)

7. Wekalat el-Liteima, Egypt: on the Coptos-Quseir road, fortified *hydreuma*, excavated cistern or well and watchtower on hill (Photograph by the author)



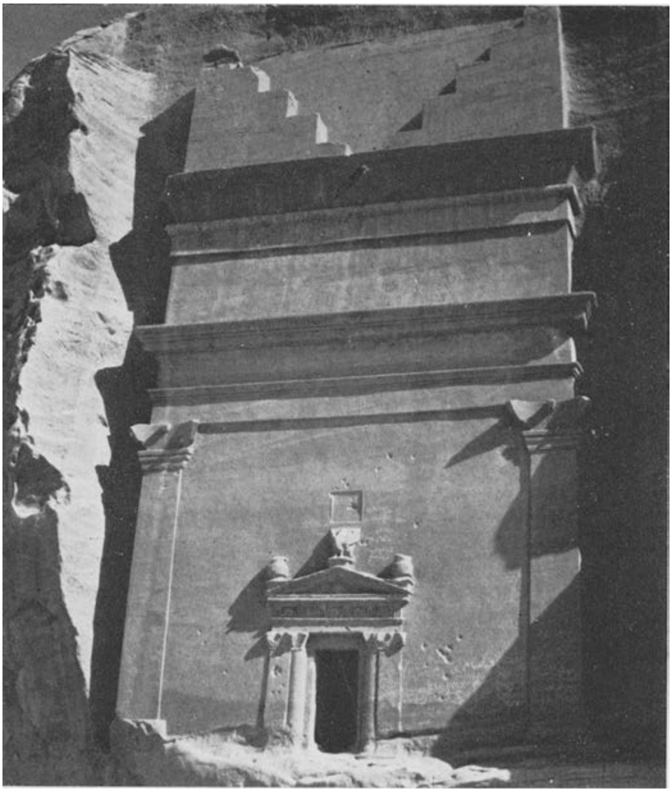
8. Wekalat el-Liteima, Egypt: watchtower above *hydreuma* on the Coptos-Quseir road (Photograph by the author)

9. Quseir al-Qadim, Egypt: "Indian" or "industrial" quarter also known as the Roman villa complex looking west (Photograph by the author)



10. Quseir al-Qadim, Egypt: plaster amphorae plugs, the one on the left mentions Titus Flavius . .allis, perhaps a freedman of one of the Flavian emperors (Photograph courtesy of J. H. Johnson, co-director of the Quseir al-Qadim excavations).

11. Qurayya, Saudi Arabia: ruined walls (Photograph courtesy of Dr. F. V. Winnett, supplied by M. L. Ingraham)

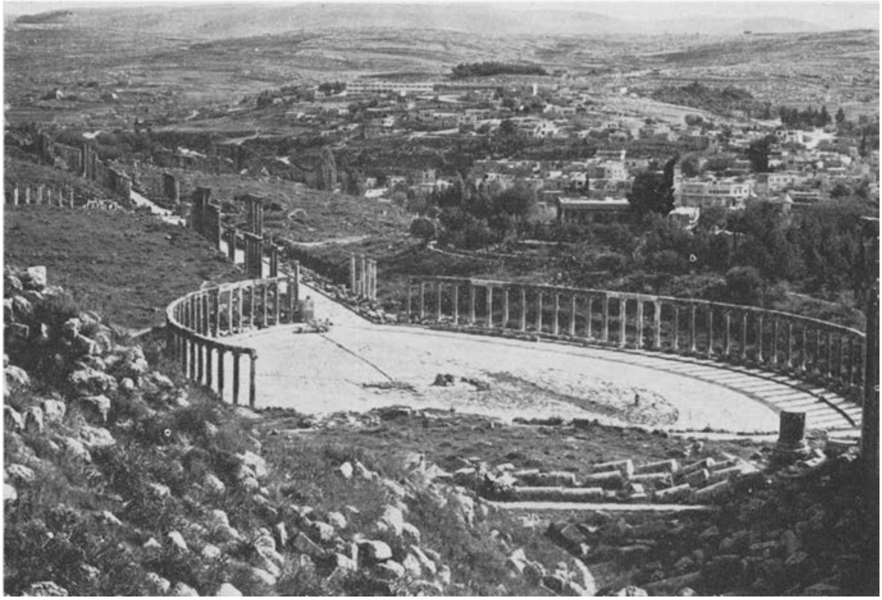


12. Medain Saleh, Saudi Arabia: rock cut tomb (Photograph by Robert Reinhold)

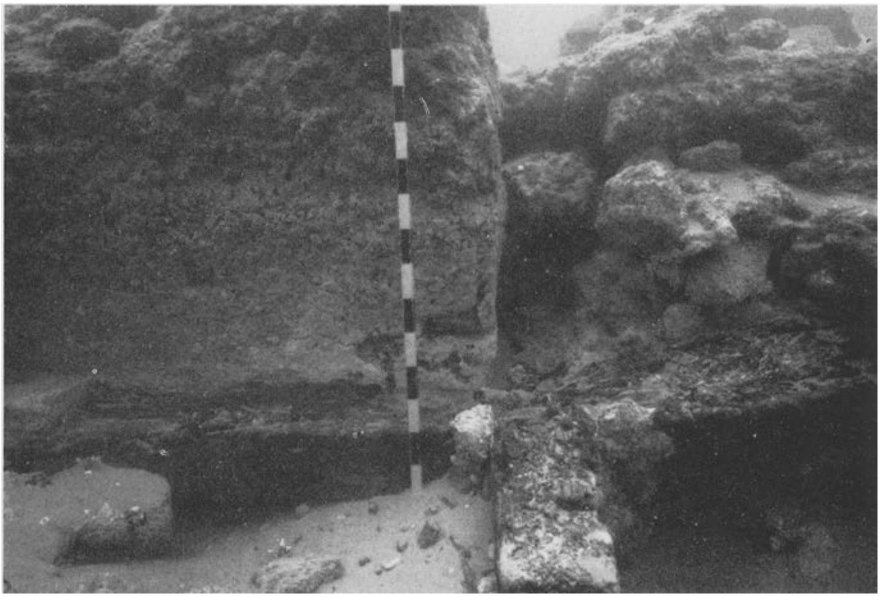
13. Medain Saleh, Saudi Arabia: rock cut tombs (Photograph by David F. Graf)

14. Zafar, North Yemen: section of wall and view of surrounding countryside (Photograph by the author)

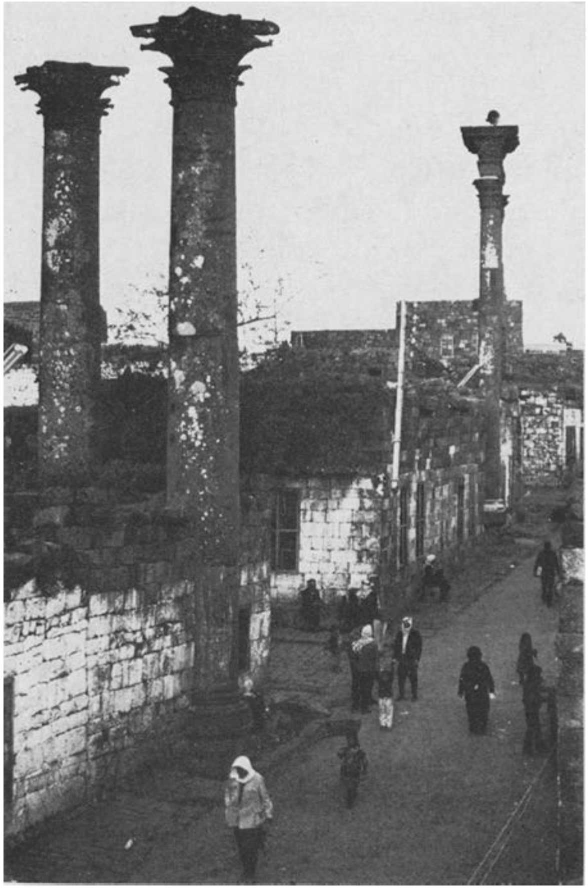
15. Petra, Jordan: tombs in the city (Photograph by the author)



16. Gerasa, Jordan: "forum" or "oral piazza" and colonnaded street (Photograph by the author)



17. Caesarea Maritima, Israel: wooden coffer used to build artificial breakwater of the Herodian-Roman port (Courtesy of the Caesarea Ancient Harbour Excavation Project: Harry Wadsworth photographer)



18. Bostra, Syria: ruins and village
(Photograph by the author)

19. Bostra, Syria: triple arch in center of town
(Photograph by the author)

20. Palmyra, Syria: colonnaded main street (Photograph by the author)

these ostraca name Berenice and twenty-eight Myos Hormos.[9] This suggests that the two ports were of equal importance at that time. However, we should note that these ostraca represent only one family's trade with these ports and may not accurately reveal the relative importance of the two emporia.

There has been some archaeological work at Myos Hormos; a survey there revealed a fort tentatively dated to the tetrarchy (late third-early fourth century). Outside the northwest corner of the fort is a bath complex closely resembling the second century bath at the Roman quarry site of Mons Claudianus in the Eastern Desert.[10] Present knowledge is inadequate to indicate the extent of the port's activity prior to the fort's construction. However, an account in the *HA* (*Firmus* 3.3-6)—a document of questionable reliability which one must use with caution—indicates that Firmus, a pretender to the Roman throne, profited from trade between Roman Egypt and South India in the late third century.

The existence of a fort at Myos Hormos in the late third-early fourth century implies that the port was inhabited and worthy of military protection. The fort may have guarded the port from raids of the nomadic Blemmyes or from pirates. Erythraean Sea trade was the main function at Myos Hormos in earlier days and it is doubtful that the military would place a fort and station a garrison in such a distant location in the Tetrarchic period unless it was intended to protect continued commercial activities. Thus the fort may provide archaeological verification of the *HA* account of Firmus that trade between Egypt and India indeed existed at that date and that Myos Hormos was active in this commerce.

The town outside the fort was constructed on a grid (Hippodamian) plan[11] suggesting that it was laid out at one time. Whether this grid plan represents original Ptolemaic or later Roman design in uncertain. However, only the Ptolemaic or Roman governments were powerful enough to organize and finance such an undertaking at the edge of the desert. A government's investment in such a port would indicate interest in the trade conducted there and putative government construction or repair of a port is important in shedding light on economic policy in the region.

Information concerning Berenice is also slight due to lack of excavation. It is clear, however, that Berenice, the southern-most Egyptian Red Sea port, was important. The prevailing northerly winds north of 20° north latitude made sailing north in the Red Sea difficult, and ships returning from South Arabia

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[9] *O. Petr.*:110-125, nos. 220-304; D. Meredith (1952):104; See A. Fuks (1951):207-216; M. I. Rostovtzeff (1931):21-26; D. Meredith (1956):356-362.

[10] On the date of the fort see C.H.O. Scaife (1936):63; T. Kraus, *et al.* (1967):203-205; on the bath complex see T. Kraus, *et al.* (1967):129. C.H.O. Scaife (1936):63 reports that I. G. Wilkinson believed that these remains were furnaces.

[11] D. Meredith (1957):58.

or South India were likely to put in at Berenice rather than sail further north to one of the other harbors. Strabo says (17.1.45):

> ...Berenice...has convenient landing places... And now all Indian and Arabian merchandise and Ethiopian goods brought via the Arabian Gulf are transported to Coptos, the emporium [on the Nile] for such cargoes.[12]

His statement indicates that Berenice was an anchorage or roadstead, not a port with a proper harbor. On the other hand, Pliny (*NH* 6.26.103) says that Berenice was a port in his day:

> Then the town of Berenice, 257 Roman miles from Coptos, where there is a port on the Red Sea.[13]

Could it be that the harbor complex built at Berenice under Ptolemy II had fallen into decay by the time of Augustus, the period when Strabo wrote? So it seems. Evidently sometime after Strabo wrote, but before Pliny, the Romans built a port or repaired existing facilities at Berenice. Archaeological evidence points to a Tiberian date for Roman construction or repair at Berenice. Cartouches of Tiberius appear at a temple to Khem in the center of Berenice. Tiberius is the earliest emperor mentioned in the temple, an indication that he may have dedicated it. Other temple cartouches name Domitian or Trajan, Hadrian and Marcus Aurelius. The temple and town were poorly constructed with madrepore, the stony coral easily obtainable from the nearby defunct reefs. The town was laid out on a grid plan revealing the outline of the Ptolemaic or later Roman settlement.[14] Here, as in the case of Myos Hormos, Hippodamian planning suggests government involvement in the town's construction and interest in the trade conducted there.

From Strabo (17.1.45) and Pliny (*NH* 6.26.103), we can infer that the port at Berenice was constructed during the first three-quarters of the first century. The *Petrie Ostraca* indicate a sudden spurt of trade activity between Coptos and Berenice late in the reign of Tiberius. Twelve of the thirty *Petrie Ostraca* mentioning Berenice were inscribed in the reign of Tiberius, most after A.D. 26. Numismatic evidence also points to a Tiberian date for the construction of the port. It was in Tiberius' reign (A.D. 19) that the Alexandria mint once again coined the tetradrachm. Its last appearance had been under the Ptolemies

[12] ...Βερενίκην...καταγωγὰς ἐπιτηδείους ἔχουσαν...καὶ νῦν ὁ Ἰνδικὸς φόρτος ἅπας καὶ ὁ Ἀράβιος καὶ τοῦ Αἰθιοπικοῦ ὁ τῷ Ἀραβίῳ κόλπῳ κατακομιζόμενος εἰς Κοπτὸν φερεται, καὶ τοῦτ' ἔστιν ἐμπόριον τῶν τοιούτων φορτίων.
On the winds see Y. Janvier (1976b):344-345; E. J. Ascher (1970):15-17; L. Casson (1980b): 22 and n. 2.

[13] inde Berenice oppidum, ubi portus Rubri maris, a Copto $\overline{\text{CCLVII}}$ p.

[14] On temple cartouches see D. Meredith (1957):59-70; M. G. Daressy (1922):173; R. Stillwell (1976):149-150; on construction materials see D. Meredith (1957):57; M. G. Daressy (1922):169, 174; M. J. Lesquier (1918):455; I. G. Wilkinson (1835):418; on the grid plan of the town see D. Meredith (1957):57 and M. G. Daressy (1922):174.

and its reintroduction facilitated trade within Egypt.[15] Tiberian coin finds from the Indian subcontinent discussed above indicate that there was increasing trade between the Mediterranean and South India during his reign and later. The increased volume of goods produced for the Rome-South India-Ceylon-South Arabia trade may well have prompted the construction or improvement of port facilities on the Egyptian Red Sea coast, including those described above at Berenice.

The Egyptian Red Sea coast was apparently a separate district outside the civilian administrative structure of Egypt. Eight or nine references to *praefectus montis Berenicidis*, *praefectus praesidiorum et montis Berenicidis*, *praefectus Berenices* or ἔπαρχος Ὄρους Βερενείκης, all here after referred to as *PMB*, four of which are dated between A.D. 11-90, indicate that the Eastern Desert was governed by a military commander. The geographical parameters of the region under his rule are ill-defined, though the Coptos Tariff of A.D. 90 may indicate that the district up to the Nile was under his jurisdiction.[16] The area's eventual incorporation into the Egyptian civilian administration is discussed below. This district, if its name is any indication, had its capital at Berenice, an important coastal city and administrative center, where improved port facilities were necessary. Augustus may have planned a port here, but the actual work was not carried out until later, perhaps in the reign of Tiberius.

The above evidence leads me tentatively to suggest a Tiberian date for construction of the port at Berenice mentioned by Pliny. We do not know who actually built or paid for it though further excavation might provide additional evidence. Cartouches of Marcus Aurelius in the Khem temple suggest that the port still functioned in the second half of the second century. We are not certain when it ceased to operate.

Ptolemy is the earliest author to mention Leukos Limen, but he says nothing of its foundation. Excavations at Quseir al-Qadim unearthed an ostracon with the word "LEUK" undoubtedly referring to the name of the port Leukos Limen. Furthermore, based on the latitude given by Ptolemy (4.5) excavators believe that Quseir al-Qadim is indeed Leukos Limen.[17] Excavations carried out in 1978, 1980 and 1982 at Quseir al-Qadim permit some tentative observations.

The port seems to be a Roman foundation. No traces remain of a Ptolemaic temple in modern Quseir reported by an early twentieth century traveller[18] and

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[15] J. Barghusen, *et al.* (1979):220; R. S. Poole (1964):xxviii. For Tiberian interest in the Red Sea and the Arabia-India trade see A. M. Devine (1979):142-159.

[16] On the *PMB* see R. Cavenaile (1970):220, no. 132 of A.D. 90; 227, no. 299; 236, no. 528; 239, no. 601 (?); 269, no. 1295 of A.D. 72 and no. 1307 of A.D. 11; 286, no. 1715; 296, no. 1962; 301, no. 2068 of A.D. 74; M. J. Lesquier (1918):152-153. The Coptos Tariff is *OGIS* 674 = *IGRR* I. 1183.

[17] J. H. Johnson (1982a):264.

[18] A. E. P. Weigall (1909):61; see also G. W. Murray (1925):142; J. Couyat (1910a):533; D. S. Whitcomb, J. H. Johnson (1979c):5.

only a single, worn Ptolemaic bronze coin—probably deposited in the early Roman imperial period—was found at Quseir al-Qadim itself, eight kilometers north of the modern town. Quantities of Arretine and Pergamene sherds and first century coins found in the course of excavation suggest that the port was first constructed in the first half of the first century A.D.[19] At present, archaeological evidence from the port itself allows no more specific dating than this.

A. Bernand's study of the inscriptions and graffiti found along the road between Coptos and Quseir may shed light on the date of the founding of Leukos Limen. He noted many Pharaonic and Roman inscriptions, but few Ptolemaic ones. There was a temple of Ptolemy III at Bir Fawakhir,[20] a gold mining area, and we would expect some indication of Ptolemaic presence along the road between there and Coptos. Bernand considered only Greek and Latin inscriptions, but did not study those written in hieroglyphs, hieratic or demotic. These scripts, which are abundantly represented along the road, may contain information from the Ptolemaic period.

The earliest of the Roman inscriptions is Augustan. Bernand found a total of three securely dated Augustan inscriptions and three others that could be Augustan or Tiberian. Yet, the emperor most frequently mentioned in inscriptions along this road is Tiberius. The Coptos-Quseir route provides ten securely dated Tiberian graffiti and seven "possible." There are other inscriptions of Claudius, Nero, the Flavians, possibly Trajan, Hadrian, possibly Antoninus Pius and a number dated by letter forms and nomenclature to after A.D. 212. There is also one of Maximinus Thrax of A.D. 238.[21] All these inscriptions attest activities along the road, and possibly at Leukos Limen, as late as the second quarter of the third century.

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[19] On the pottery see W. R. Johnson and D. S. Whitcomb (1979b):67-68; S. E. Sidebotham (1982b):257-261; On the coins see S. E. Sidebotham (1986):forthcoming and J. H. Johnson (1982a):265-266.

[20] A. Bernand (1972a):14, 71; O. Guéraud (1942):141.

[21] On Augustan period graffiti see A. Bernand (1972a):39, 75, 76-77, 221, 222, 225-226. The Augustan ones were: one from Qaşr el-Banat dated 26 B.C.; one from the Paneion of el-Boueib dated to Augustus' thirty-third year, one from the Wadi Hammamat of A.D. 14. Three, possibly of Augustan date, were: two from el-Boueib and a third from Wadi Hammamat. The Tiberian graffiti from the Paneion in the Wadi Hammamat: A. Bernand's nos. 40, 41, 42, 43, 45, 46, 47 are securely dated while nos. 38, 44, 48, 49, 95 possibly are. Tiberian inscriptions from the Paneion of el-Boueib are Bernand's nos. 143, 144, 145 and possibly nos. 142, 146. On Claudius at Lakeita: A. Bernand's no. 1; on Nero at Wadi Hammamat: Bernand's no. 50; the Flavians: Bernand's no. 2 at Lakeita may be Vespasianic; no. 51 at Wadi Hammamat on Titus; no. 53 on Domitian; On Trajan at el-Moueh: A. Bernand's no. 19; on Hadrian: Bernand's nos. 4-5 at Lakeita and possibly nos. 54, 55 in Wadi Hammamat; on Antoninus Pius: A. Bernand's no. 56 in Wadi Hammamat; for inscriptions or references after A.D. 212 see *P. Oxy.* 45.3243 which "reveals that Mons Claudianus was still quarried in" A.D. 214/215 and Bernand, (1972a) 123-127; 154-155; 159-160; 176-178; for Maximinus Thrax see no. 57.

Tiberian graffiti demonstrate exploitation of the mines and quarries of the Eastern Desert early in his reign, and the army's involvement in this activity in his day and later.[22] Strabo indicates (2.5.12; 17.1.13) interest in Rome's Arabia-India trade as well. Evidence cited above points to a Tiberian date for construction of a port at Berenice. Tiberian graffiti on the Coptos-Quseir road, which mainly contain the names of Roman troops, suggest government interest in facilitating or monitoring Rome's Erythraean Sea commerce for the road was important in the transportation of goods traded between Coptos, Leukos Limen and the Arabian, Indian and Ceylonese ports served by Leukos Limen.

The archaeological evidence from Quseir al-Qadim points to its foundation in the first half of the first century A.D. In addition, Strabo, who carefully lists the ports on the Egyptian Red Sea coast, is silent about the existence of Leukos Limen. This suggests that the port did not exist in his day, but was founded only later. Numismatic evidence from India and archaeological and literary evidence relevant to Berenice indicate increased interest in Rome's Arabia-India-Ceylon trade from Tiberius on. These observations together with the expanded use of the route between Coptos and Leukos Limen in Tiberius' time may supply evidence for dating the foundation of Leukos Limen to the Tiberian period or within a few decades thereafter.

Ceramic and numismatic evidence from Quseir al-Qadim indicates that the port prospered from the first to second centuries and may have continued to function in the third, though on a much reduced scale. However, there is little evidence for activity at the port in the later third century. A single coin—a billon tetradrachm of the third or fourth quarter of the third century which was excavated at Quseir in 1980[23]—is the only discovery from the port to date from that time. Consequently it cannot verify the existence of trade at that date at Quseir nor, indeed, can it be evidence for activity at the port then.

Some of the buildings near the port were quite large and well constructed of fired brick. Perhaps firms trading with Leukos Limen or representatives of the imperial government built them. There are two ostraca indicating government presence at the port. One is in Latin, used in Egypt only by the army or imperial officials. The other mentions a military tribune (Χιλίαρχος). Although the military may have been stationed at the port to monitor trade, there is no evidence that they personally participated in commerce. However, two amphorae plugs naming imperial freedmen attest their trade with the port.[24]

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[22] A. Bernand (1972a):especially 80ff; Pliny, *NH* 36.11.55 also attests this for the Augustan and Tiberian periods; O. Guéraud (1942):141-196 at Wadi Fawakhir.

[23] J. H. Johnson (1982a):265.

[24] On buildings see D. S. Whitcomb, J. H. Johnson (1982c):17; on the military tribune see R. S. Bagnall, *et al.* (1979):243-244; on freedmen on amphorae plugs see Bagnall, *et al.* (1979):243-244.

Edifices further from the harbor were poorly constructed. In the so-called "Indian" or "industrial" quarter also known as the Roman villa complex —where archaeologists discovered glass and glass slag, Tamil graffiti, a small iron working furnace, a Himyaritic graffito and sherds, a Sabaean graffito, large quantities of amphorae and possibly an oil or perfume factory—walls were crudely built using the cheapest materials available: unfired mud brick, roughly cut madrepore, as at Berenice, and field stones.[25]

Construction dates are insecure, but the excavation allows some tentative conclusions. The port was laid out on a grid plan. The fine brick buildings near the harbor and the poorly constructed ones further from the harbor are aligned with the grid plan and, possibly, were contemporary[26] In this instance, the different qualities of workmanship among the buildings are not necessarily indicative of differences in date, but rather of the financial or social status of the builders or owners. Those buildings nearer the port belonged to trading companies whose main headquarters were in Coptos or to the government. Perhaps persons engaged in small-scale household industries with less money owned the poorer buildings further from the port. The two poorly constructed buildings uncovered in the "Indian-industrial" quarter—called the "Roman villa" by the excavators—served as residences, workshops and storage rooms for their occupants. The shabby construction of such buildings here and at Myos Hormos and Berenice possibly suggests that traders wanted quick profits with low overhead. The shabby construction may also point to the low status and weak economic position of the traders and manufacturers operating at these ports. The excavators uncovered no roof tiles indicating open air (hypaethral) construction or roofing with perishable materials, such as palm fronds, that have not survived. The few wooden timbers found in the "villa" defined the ground floor from a basement storage room and were not roof beams of the "villa" itself.[27] Such roofing construction, or rather lack thereof, may indicate only occasional use of the buildings, for perennial habitation required more extensive protection from wind, sun and occasional rain experienced in the area. Seasonal occupation of the site, at least by merchants engaging in the Erythraean Sea trade, probably depended on the winds in the area

[25] On glass see A. Roth (1979):144 and C. Meyer (1982b):215-232; on Tamil graffiti see D. S. Whitcomb (1979b):18 and J. H. Johnson (1982a):263-264; on the iron working furnace see D. S. Whitcomb, J. H. Johnson (1979c):17-18; on Himyarite graffito and sherds see G. B. Gragg (1979):244-245; *The American Institute for Yemeni Studies Newsletter*, no. 2, July 1979; 7; on the Sabaean graffito: personal communication from W. W. Müller of Jan. 6, 1983; on amphorae see W. R. Johnson and D. S. Whitcomb (1979b):68 and D. S. Whitcomb (1982a):56-115; on building materials see D. Whitcomb (1982b):21-49.

[26] D. S. Whitcomb (1982b):4-5.

[27] D. S. Whitcomb (1982b):29-30. On the status of traders see Finley (1973):60, 144-145, and cf. Pleket (1983):131-144.

which determined the sailing times. Though dates for the Red Sea-Indian Ocean sailing season are debated, sailing was better at some times than others south of 20° north latitude.[28] Perhaps after departure of the ships from the Red Sea ports merchants returned to the Nile valley for more provisions and trade items and to await the ships' return some months later.

Leukos Limen could not compete with its larger neighbors Myos Hormos and Berenice. It did not possess the best natural harbor on the Egyptian Red Sea coast, but was the terminus of the shortest route from the Nile valley emporium of Coptos.[29] This was undoubtedly the port's chief asset.

Clysma, near Suez, was also a Roman port. Its exact identification is debated and statements in Strabo (16.4.23; 17.1.26) have led scholars to identify it with the Ptolemaic foundations of Arsinoë, Cleopatris and Heroönopolis. Excavation by the French in the early 1930s revealed that Clysma flourished in the Ptolemaic period and that it continued in operation in the late Roman-early Byzantine and early Arab periods, when most other Egyptian Red Sea ports were no longer functioning. Clysma's importance in the interim is debated. Here too, as at Leukos Limen, manufacturing for local consumption and/or export, took place; weaving, perfume and glass manufacture, ceramics and wood and ivory sculpture industries flourished.[30]

Aelius Gallus built the fleet used in his Arabian campaign at Clysma (Strabo 16.4.23). The port may have been important in the early second century, for Trajan built at least one canal between the Nile and the Red Sea terminating near Clysma. Lucian indicates that Clysma was a port of embarkation for India in the second half of the second century.[31] He wrote when evidence for the operation of other Egyptian Red Sea ports, besides perhaps Leukos Limen and possibly Berenice, is lacking.

Ships sailing towards Clysma encountered great difficulties due to the prevailing northerly winds. Ancient sailing vessels were extremely limited in maneuverability and could not tack more than seven points off the wind. However, it is not difficult to see why Clysma continued as a port despite this handicap. Goods sent from Alexandria via Clysma could travel by ship the entire way, avoiding the danger and expense that the desert crossings presented when using the other Egyptian Red Sea ports. This was an important factor in Clysma's continued existence.[32]

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[28] E. J. Ascher (1970):10-26; E. J. Ascher (1972):1-7; L. Casson (1980b):21-36.

[29] M. J. Lesquier (1918):420; D. S. Whitcomb, W. R. Johnson (1979c):4.

[30] B. Bruyère (1966):11-60, 76, 86, 90-94.

[31] Lucian, *Alexander or the False Prophet* 44.

[32] On ancient sailing ships see L. Casson (1959):220-221 and B. S. J. Isserlin (1955):319-320; on the expense of land versus maritime transportation of goods see A. H. M. Jones (1964): 841-842; M. I. Rostovtzeff, *SEHRE*: 146; C. A. Yeo (1946):221-244; P. D. A. Garnsey (1976):16.

Desert roads joined Myos Hormos, Leukos Limen and Berenice with emporia on the Nile. These routes also connected quarries and mines in the Eastern Desert with the Nile valley. The four best known roads connected Myos Hormos, Leukos Limen and Berenice with Coptos on the Nile and the Via Hadriana that connected Antinoë on the Nile with some of the Red Sea ports. The Edfu-Berenice road—though extensively used in the Ptolemaic period as indicated by inscriptions and graffiti from the Pan temple at El Kanais—was little used by the Romans though forty miles shorter than that from Coptos to Berenice.[33]

Strabo (17.1.45) gives insufficient information about the Coptos-Myos Hormos road:

> Formerly the camel merchants travelled by night using the stars for guidance, like the sailors. They carried water with them when they travelled. However, now they have built watering places by digging down to a great depth and they have constructed cisterns for rain water though it is scarce. The journey takes six or seven days.[34]

Archaeological surveys have demonstrated that there were at least seven stopping points along the road. The traveller left Coptos and followed the Nile north to Kainopolis, then north-north-east to El-'Aras 15 m.p. (Roman miles) or 21 km. from Kainopolis. Proceeding north, the next water point was at El-Heita 36 m.p. or 51 km. from Kainopolis; then northeast to El-Sakiah or Sakiat et-Ter 49 m.p. or 70 km. from Kainopolis. The next station was either at Bab el Mukhenig or Der el-Atrash at 70 m.p. or 100 km. from Kainopolis. There were also stations at Kattar, m.p. 87 or 123 km. and Badia', 101 m.p. or 143 km. from Kainopolis, the last before reaching Myos Hormos. There were other stations between the Kattar and Badia' stations, off the road where it branched north to the imperial quarries at Mons Porphyrites.[35]

Another survey of the Coptos-Myos Hormos road revealed fifteen pairs of cairns and three single ones regularly spaced at a distance of *c.* 1.5-1.6 km. In cases where a cairn was missing, the next one or pair appeared approximately 3-3.2 km. from the last noted. The distance between each is almost exactly an English mile (1609 m.), somewhat longer than a Roman mile (1481.5 m.). These cairns appeared elsewhere along the road, often at half English mile intervals. The distance may represent Ptolemaic reckoning. Perhaps the cairns

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[33] R. S. Bagnall (1976b):35; A. Bernand (1972b): *passim*.

[34] πρότερον μὲν οὖν ἐνυκτοπόρουν πρὸς τὰ ἄστρα βλέποντες οἱ καμηλέμποροι καὶ καθάπερ οἱ πλέοντες ὥδευον κομίζοντες καὶ ὕδωρ, νυνὶ δὲ καὶ ὑδρεῖα κατεσκευάκασιν, ὀρύξαντες πολὺ βάθος, καὶ ἐκ τῶν οὐρανίων, καίπερ ὄντων σπανίων, ὅμως δεξαμενὰς πεποίηνται. ἡ δ'ὁδός ἐστιν ἓξ ἢ ἑπτὰ ἡμερῶν.

[35] G. W. Murray (1925):138-150; D. Meredith (1952):94-111; for further discussion of stations on the Kainopolis-Myos Hormos road see C. H. O. Scaife (1935):58-104; T. Kraus, *et al.* (1967):201-203.

were erected when Myos Hormos was a Ptolemaic port. An ostracon, tentatively dated to the second century B.C., from the station at El-Heita on the Coptos-Myos Hormos road, attests Ptolemaic activity along the route and perhaps at Myos Hormos itself.[36] Strabo's discussion of Myos Hormos (16.4.5; 16.4.24; 17.1.45) contrasts with Pliny's (*NH* 6.33.168) general silence about the port. This together with Pliny's failure to mention the Coptos-Myos Hormos road may indicate that Myos Hormos was not as important in Pliny's day as it had been in Strabo's.

There is no ancient discussion of the Coptos-Leukos Limen road, though the Torino Papyrus of the XIX dynasty (*c.* 1308-1194 B.C.) depicts a portion of it. A survey between Coptos and Quseir in 1921 established the distance between them as 122 m.p. or 173 km. There are ten sites between the two termini, though only seven preserve ancient stations. These are: 1) Wekalat el Mefarik (the Qalat ed-Diyan of Ibn Jubayr) at 14 m.p. or 20 km. from Coptos; 2) Lakeita (Phoenicon: Coptic ruin, well, palms, no station) 24 m.p. or 34 km. from Coptos; 3) Qaşr al-Banat (station) m.p. 34 or 48 km. from Coptos; 4) Umm Mweh (station with cistern) m.p. 44 or 63 km. from Coptos; 5) Hammamat (station with well 32 m. deep with spiral staircase) 55 m.p. or 78 km. from Coptos; 6) Fawakhir (ruins of temple of Ptolemy III, gold mines, no station) 61 m.p. or 86 km. from Coptos; 7) Wekalat el Zerkah (= Abu Fanani = Abu Ziran, large station) 77 m.p. or 109 km. from Coptos; 8) Wekalat el Hamrah (station) m.p. 86 or km. 121 from Coptos; 9) Sayala (=Hag Suleiman, station, well with direct stairway) m.p. 93 or km. 132 from Coptos; 10) Wekalat el-Liteima (= Wekalat ed-Duwi, station) at 102 m.p. or km. 145 from Coptos, the last station before Leukos Limen. Watch towers on the hills flanking the road supplemented defense offered by the fortified water points (*hydreumata*).[37]

In contrast to the Coptos-Leukos Limen road, the desert route from Coptos to Berenice is well documented in ancient sources. Pliny discusses the road (*NH* 6.26.102-103) and it appears in the *Tabula Peutingeriana* and the *Itinerarium Antoniniana*. Ptolemy II originally built both Berenice and the road to facilitate trade between the port and the Nile. According to the *Itinerary*, in Roman times Berenice was the only Egyptian Red Sea port connected to the Nile by public road.[38] Perhaps this is another indication that Berenice was the administrative center of the Red Sea coastal zone known as the Prefecture of Mount Berenice. If so, its connection to the Nile by public road was, *a priori*, a necessity.

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[36] C.H.O. Scaife (1936):63-72; C.H.O. Scaife (1935):58-104.

[37] For a brief synopsis of the contents of the Torino Papyrus see J. Ball (1942):180-182 and plate VII; on the Coptos-Quseir road see G. W. Murray (1925):138-150 and A. J. Reinach (1910b):116ff.

[38] E. Weber (1976):segment VII, 2-5 at bottom, text: 27; G. F. C. Parthey, M. Pinder, eds. (1848):76-77.

Pliny gives a total distance between Coptos and Berenice of m.p. 257 (*NH* 6.26.103) while the *Itinerary* and *Table* estimate m.p. 258. The difference is negligible. According to Pliny (*NH* 6.26.103), one could make the journey in twelve days, travelling mostly at night to avoid the heat. Yet, the sources disagree on the number of stations between the two termini. Pliny names only eight stations along the route:

> You make the journey from Coptos by camel. There are watering points placed at intervals along the route. The first, 22 Roman miles [from Coptos] is called Hydreuma. The second is in the mountains, a day's journey away. The third watering point is called Hydreuma and it is 85 Roman miles [from Coptos]. The fourth is in the mountains. The fifth watering station is the Hydreuma of Apollo, 184 Roman miles from Coptos. The sixth is in the mountains. The seventh water point is at Novum Hydreuma, 230 Roman miles from Coptos. There is another, the eighth, old hydreuma called Trogodyticum, where there is a garrisoned fort which accommodates 2000 people. Trogodyticum is 7 Roman miles from Novum Hydreuma. Then Berenice town where there is a port on the Red Sea 257 Roman miles from Coptos.[39]

There were fewer stations per Roman mile on the Coptos-Berenice road than on the Coptos-Myos Hormos or Coptos-Leukos Limen routes. Either Pliny simply failed to mention some of the stations, or those he omitted were built

| Pliny | | m.p. from Coptos | Antonine Itinerary | m. p. from Coptos | Peutinger Table |
|---|---|---|---|---|---|
| 1) | Hydreuma | 22 | 1) Poeniconon | 24 | 1) Phenice |
| 2) | second | — | 2) Didime | 24(48) | 2) Afrodites |
| | — | — | 3) Afridito | 20(68) | 3) Dydimos |
| 3) | Hydreuma | 85 | 4) Compasi | 22(90) | 4) Conpasin |
| 4) | in mountain | — | 5) Iovis | 23(113) | 5) Dius |
| | — | — | 6) Aristonis | 25(138) | 6) Xeron |
| | — | — | 7) Falacro | 25(163) | 7) Philacon |
| 5) | Apollinis | 184 | 8) Apollonos | 23(186) | 8) Apollonios |
| 6) | in mountain | — | 9) Calbasi | 27(213) | 9) Cabau |
| 7) | Novum Hydreuma | 230 | — | — | — |
| 8) | Hydreuma Vetus | 237 | 10) Cenon Hydreuma | 27(240) | 10) Cenonnydroma |
| 9) | Berenice | 257 | 11) Beronicen | 18(258) | 11) Pernicide-Portum |

[39] *NH* 6.26.102-103: A Copto camelis itur, aquationum ratione mansionibus dispositis: prima appellatur Hydreuma XXII: secunda in monte diei itinere; tertia in altero Hydreumate a Copto LXXXV; deinde in monte; mox ad Hydreuma Apollinis a Copto CLXXXIV; rursus in monte; mox ad Novum Hydreuma a Copto CCXXX. Est et aliud Hydreuma vetus—Trogodyticum nominatur—ubi praesidium excubat deverticulo duum milium; distat a Novo Hydreumate VII. Inde Berenice oppidum, ubi portus Rubri maris, a Copto CCLVII p.

only after he wrote. The *Itinerary* and *Table* indicate ten stations between Coptos and Berenice.

The two later sources, the *Itinerary* and the *Table*, do not agree on every point, but they seem more accurate than Pliny in their location of road stations. Perhaps after Pliny's day more wells were dug and road stations built; additions reflected in the *Itinerary* and *Table*. These latter documents specify the name of each station and give distances between all of them. Similarity in the station names and distances in the two later sources suggests that both drew upon earlier information, perhaps official records. However, stations 2 and 3 are transposed in one source and the names are different in the case of station number 6. Pliny's list, on the other hand, seems incomplete. He omits several stations altogether and fails to give some distances. The distances he does give differ from those in the *Itinerary* and *Table* although sometimes they are close: Pliny's station number 5 (Apollinis) at 184 m.p. from Coptos must be station number 8 of the *Itinerary* and *Table* (Apollonos and Apollonios) at 186 m.p. Pliny's station number 8 (Hydreuma Vetus) at 237 m.p. may be station number 10 of the other sources: Cenon Hydreuma and Cenonnydroma at m.p. 240. Pliny's imprecise description of the route either reflects his ignorance of details for this part of the empire or suggests that additional installations were erected after his day.[40]

A change in the administrative status of Egypt's Red Sea littoral in the late first or early second century may have prompted Hadrian to build a new Nile emporium at Antinoë (Antinoopolis) and a road, the Via Hadriana, leading to Berenice.[41] The *Papyrus Hamburg* 7 of A.D. 132, which mentions the nome of Berenice, indicates that the region was part of the civilian administrative system under Hadrian.

Imperial road construction of this kind in newly acquired areas of the empire was quite common. We may conclude that the Eastern Desert and Red Sea coast were, indeed, inside the empire since Roman troops and a prefect were stationed in the region.[42]

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[40] For an example of Pliny's ignorance see his account in *NH* 6.24.84 of the journey to Ceylon of the *libertus Anni Plocami*—the freedman of Annius Plocamus—which he dates in the principate of Claudius. Compare this with D. Meredith (1953a): 38-40 who notes a date of A.D. 6 for Lysas' passage along this road. Lysas was a freedman of Annius Plocamus. See chapter two for additional discussion.

[41] K. Meister (1948):115 postulates that Trajan initiated construction of the 800 km. long road bearing the name of Hadrian (Via Hadriana) who completed it. For a brief nineteenth century description of Antinoë see I. G. Wilkinson (1835):380-382; see also H. Braunert (1964):128, 213-219, 287. For a general discussion of Tacitus' account of the Egyptian Red Sea coast see O. Clason (1871); H. I. Bell (1940):133-147 deals with the constitution and municipal organization of the city. On Antinoë's foundation see S. Follet (1968):54-57. For more on Antinoë see J. D. Thomas (1982):62, 103 and nn. 60-63, 102-111.

[42] K. Meister (1948):94-122.

The road from Antinoë reached the Red Sea coast at about 28°0 N. latitude, well north of Myos Hormos, and then turned south to connect a number of the Red Sea ports. Its exact course is uncertain for it has never been surveyed, but traces of it have been seen along the Red Sea coast. Although an Hadrianic inscription of 137 indicates that it was very safe, level and supplied with numerous *hydreumata*, stations and garrisons, none of the installations has been found.[43]

The *raison d'être* for this new road is unclear. The Romans may have expected Antinoë to supplement Coptos as a terminus for traffic from the Red Sea to the Nile. This despite the fact that the desert journey would have been considerably longer and more expensive than the more direct routes from Coptos. In addition, the road may have protected against raids by desert nomads, but there is little evidence for this.[44] Further investigations may reveal the role of Antinoë and the Via Hadriana in this trade.

There were no fixed distances between water points in the Eastern Desert. Their locations did not necessarily represent the distance one could travel in a single day. Most water points were so close together that a fast traveller could visit two or three in a day's journey. Placement of *hydreumata* may have been dictated by the government's desire for troops to keep a close eye on those using the roads and to monitor the activities of traders. Roughness of terrain partially prescribed placement of *hydreumata*. The more rugged the terrain and slower the travel, the closer the water points were to one another. There is a concentration of fortified water points near the major quarries of Mons Claudianus and Mons Porphyrites. This close grouping of *hydreumata* suggests that the large work forces transporting stone from the quarries required substantial quantities of water and troops to guard them.[45]

Discussion of the course of the roads leading from the Nile and the Red Sea necessitates a description of their construction and maintenance and that of the stations along them. We should not forget that these roads served both the mines and quarries in the Eastern Desert and the Red Sea ports.

The Roman roads in the Eastern Desert were seldom paved. Road construction was very expensive and builders avoided paving where soil was well compacted and solid. Eastern Desert roads were similar to those in Tripolitania, Libya: they were cleared of rubble and the hard surface beneath served as a road bed. There was another reason for avoiding paved roads: their

[43] G. W. Murray (1925):plate XI; D. Meredith (1952):95; E. Littmann and D. Meredith (1953):26-27; *IGRR* I.1142 = *OGIS* 701; for a commentary on this inscription see E. Miller (1870):313-318 and E. Littmann and D. Meredith (1953):26-27.

[44] Cf. A. J. Reinach (1911b):63.

[45] Cf. T. Barron, W. F. Hume (1902):87.

courses, which often ran along wadi beds, would require frequent, costly repairs in the event of occasional flash floods which can be quite severe.[46]

The longest stretch of road still visible is that marked by cairns outside Myos Hormos which we discussed above. The Romans transported stone produced by the quarries at Mons Porphyrites and Mons Claudianus in the northern region of the Eastern Desert to the Nile along these *viae*. Wagons taking such heavy loads had to have a very smooth and solid road surface.[47] In the southern region, where there were fewer quarries, the camel remained the principal means of transportation and there was little need for paved roads.

Upkeep of the roads themselves was relatively simple. The main concern was maintenance of the *hydreumata*, stations *(stathmoi)*, and water points or garrisoned forts *(phrouroi)* along the roads for the revictualing, resting and protection of the caravans and quarry convoys. The numerous fortified water points and army units stationed along the routes attest both the seriousness of bandits and marauding nomads and the government's determination to protect the routes. The garrisons may also have monitored traders using the roads.

The *hydreumata* had similar ground plans. They resembled Roman military camps, square or rectangular enclosures with a single entrance flanked by towers. There were towers at the four corners of the enceinte and abutting each outside face of the enclosure wall. There were also interior staircases leading to the parapets of the fortification wall. There was frequently a large well in the center of the *hydreuma*. There were considerable differences among the *hydreumata* depending upon the terrain on which they stood, the traffic they served, and whether or not their water sources were outside the walls.[48]

Builders constructed stations serving teams transporting blocks from the quarries differently from those serving lighter traffic to the south. The stations provided the quarry convoys with extensive stabling and watering facilities for the draught animals. Troughs outside the *hydreumata*, outside stable areas, and the use of unburnt brick are typical features of the stations between the quarries and the Nile.[49] The dearth of stations, and the absence of animal enclosures and outside water troughs, in those that do exist on the roads leading

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[46] Geologists working out of Quseir in the winter of 1980 reported seeing a paved ancient road near Mons Porphyrites; for the Tripolitanian roads see R. Goodchild (1948):7. There was a serious flood in Quseir in the fall of 1979 which killed several people and damaged a number of houses; see also Scaife (1935): 61 and plate III, no. 2 for an example of such heavy rains.

[47] C. H. O. Scaife (1936):65; C. H. O. Scaife (1935): plate VII, no. 1; Meredith (1952):94.

[48] D. Meredith (1952):94; confirmed by personal observations on the Coptos-Quseir road in the winter of 1980.

[49] D. Meredith (1952):94, 96.

from the quarries to the coast indicate that stone from the quarries was transported to the Nile, not to the Red Sea coast, for shipment.

On the road between Coptos and Quseir, which the author visited in the winter of 1980, the extant *hydreumata* have the same design, but were built of local field stones rather than brick. In visits to these stations the author never detected outside animal enclosures. The numerous small rooms that abutted the interior of the *hydreumata* walls presumably housed the garrison and its supplies and passing caravaneers.

*Hydreumata* along the Coptos-Leukos Limen route were in visual contact with one another through a series of watch towers spaced at uneven intervals atop the mountains flanking the road or along the road itself. One tower was always in sight of one or two others or in sight of a *hydreuma*. These towers were fairly uniform in construction: square, solidly built with no interior space, approximately 2-2½ m. in height. They were built, like the *hydreumata*, of local field stones. Ostraca dealing with military garrisons in the Eastern Desert suggest that soldiers in groups of twos or fours sent out in rotation from the garrisons of the *hydreumata* stood watch by these towers, ascending them only when a signal had to be sent.[50] The directors of the Quseir excavation suggest that the purpose of these towers was to signal Coptos when the merchant ships arrived at Leukos Limen. I believe that their function was to signal the nearby *hydreumata* of approaching caravans or marauding nomads so that they could prepare reception or defence.[51] Perhaps when the winds prevented ships from sailing and there was, consequently, a decrease in caravan traffic, this guard could be slackened.

Evidence from Leukos Limen helps date the *hydreumata* and watch-towers along the Coptos-Leukos Limen road. The sherds found at some of the *hydreumata* closely parallel first and second century ones excavated at Quseir al-Qadim suggesting an approximate date for the *hydreumata*. The similarity of construction between the towers abutting the *hydreumata* and those on the road or in the mountains flanking the road suggest contemporary construction dates for both. This evidence together with the ostraca and an unconfirmed report of graffiti mentioning Roman soldiers stationed beside one of the towers flanking the road indicates Roman use and possibly construction of these installations in the first and second centuries, the period of greatest activity in the Eastern Desert and at the Red Sea ports.

Papyri, ostraca and inscriptions indicate that the army was responsible for the construction and maintenance of the roads, posts and *hydreumata* along them. A military tribune was director of mines (Μεταλλάρχης) in the Eastern

[50] See R. S. Bagnall (1977):69ff; R. Coles (1980):126-131; R. S. Bagnall (1982b):125-128.

[51] On the problem of robbery or assault in antiquity in sparsely populated or unpopulated areas see R. MacMullen (1974): 4 and nn. 13-15 who cites Columella, *De Re Rustica* 1.5.7 and Josephus, *BJ* 2.70, 2.125.

Desert in A.D. 10/11. Roman troops guarded and directed criminals and prisoners-of-war condemned to work the mines and quarries in the Eastern Desert in the first and second centuries. The troops also protected convoys between the Nile and the mines and quarries from bandits and nomads. Military presence at Leukos Limen and near Berenice in this period and at Myos Hormos in the first and late third-early fourth centuries[52] testifies to military protection of the ports. A Latin inscription from Coptos, dated *c.* A.D. 43-50, lists several dozen troops from different cohorts who undertook the repairs of Eastern Desert facilities. The legion to which the troops belonged, though unnamed, was perhaps either Legio III Cyrenaica or XXII Deiotariana both of which were stationed in Egypt from Tiberius to Trajan. Possibly, too, these troops were drawn from one of the additional 9 cohorts and three alae also stationed in Egypt at the time. Although there was a third, unnamed, legion known to have been stationed at Thebes after a revolt there in 29 B.C. it was withdrawn by A.D. 23 and, therefore, could not have contributed troops mentioned in the inscription. Following the list of troops responsible for the work, the inscription proceeds:

> By those whose names are written above wells were built and dedicated at Apollonos Hydreuma on December 25, at Compasi on 1 August, Berenice on December 14, at Myos Hormos on 15 January they built and repaired a camp.[53]

The troops not only dug wells along the route to Berenice at Apollonos Hydreuma, Compasi and Berenice, but also built a camp at Myos Hormos. It was customary for the army to undertake maintenance of the roads and water points in the Eastern Desert and to garrison the ports. The later third-early fourth century fort at Myos Hormos testifies to continued military presence in the Eastern Desert long after the region was incorporated into the civilian administrative system of Egypt.

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[52] *AE* 1910, 207 = V. Ehrenberg, A. H. M. Jones (1955):113, no. 232; R. S. Bagnall (1975):133-145; on Roman troops guarding prisoners in the mines see T. Kraus, *et al.* (1967): especially 114-201 for the Mons Porphyrites and Mons Claudianus areas; F. Debono (1951): 59-91 for all periods in the Eastern Desert; for some inscriptions revealing military presence at Mons Porphyrites see D. Meredith (1953b):126-141; for inscriptions from Mons Claudianus, some of which are military, see D. Meredith (1954a):103-123; also G. W. Murray (1925):138-150; *SB* I.4639; D. Meredith (1952): 94-111; L. A. Tregenza (1949a):139-150; R. S. Bagnall, *et al.* (1979):243-244 on military presence at Leukos Limen; M. G. Daressy (1922):177 on military presence near Berenice; T. Kraus, *et al.* (1967):203-205 on military presence at Myos Hormos.

[53] On military repairs of Eastern Desert *hydreumata* see D. Meredith (1954b):281. For the legions responsible for these repairs see Lesquier (1918):40-55 on the Legio XXII Deiotariana, 56-63 on Legio III Cyrenaica; E. N. Luttwak (1976):86; Reinach (1911b):62 believes that the Legio III supplied troops for the Eastern Desert garrisons because Legio III had its headquarters at Coptos, but cf. M. P. Speidel (1982):120-124. *ILS* I.2483 = *CIL* III.6627 = *Eph. Epig.* V (1884), 5, no. 15: Per eosdem qui supra scripti sunt lacci aedificati et dedicati sunt: Apollonos hydreuma VII K. Ianuar., Compasi K. Augustis Berenicide XVIII K. Ianuar., Myoshormi idus Ianuar.; castram (sic) aedificaverunt et refecerunt.

Another inscription from Coptos of A.D. 216 (*OGIS* 639 = *IGRR* I.1169) mentions a unit of mounted Palmyrene archers. Such units may have escorted caravans in the Eastern Desert. Yet, if this was a service they performed, it was not rendered to every caravan, there were too many for that, but only to those transporting especially valuable cargoes or important persons. Imperial freedmen visited the Eastern Desert. Several bearing the name Epaphroditus from the period of Nero and Hadrian appear in inscriptions and on an ostracon from the region where they conducted business for themselves or their patrons.[54] Perhaps such mounted units escorted them in their journeys.

Ostraca from Wadi Fawakhir indicate that there was considerable traffic along the Coptos-Leukos Limen road in both directions. A Roman military unit was stationed at Fawakhir from the second half of the first century, but there is no evidence for earlier Roman military activity here. The ostraca contain private letters of soldiers requesting items from Coptos or discussions of private business transactions.[55]

There are other indications of travel along the Eastern Desert roads. The *Petr. Ostraca* attest the frequent use of Eastern Desert roads as do Nabataean graffiti indicating cameleers' activities in the second and third centuries if not earlier.[56] Several inscriptions reveal Roman military activity in the Eastern Desert in the first century. On the Myos Hormos road an inscription of A.D. 11 mentions Publius Juventius Rufus, eparch of Berenice and superintendant of mines in Egypt. On the Leukos Limen road there is an inscription of A.D. 14 referring to a freedman of the *PMB*. There is also epigraphic evidence for activities of the freedman of the eparch Rufus mentioned above. The freedman seems to have been a foreman-supervisor in one of the Eastern Desert mines. Roman auxiliary troops were active in the Wadi Hammamat in Neronian and Domitianic times.[57]

There is epigraphic testimony for civilian and military travel on the Coptos-Berenice road throughout the Julio-Claudian period. An inscription of 2 B.C. records a Roman citizen C. Numidius Eros who travelled to India perhaps for commercial purposes. A freedman of Annius Plocamus passed along this

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[54] For a commentary on *OGIS* 639 see A. J. Reinach (1911a):58, 79; on caravan escorts see Rostovtzeff, *SEHRE*: 155; on imperial freedmen in the Eastern Desert see A. Bernand (1972a):42 and R. S. Bagnall, *et al.* (1979):243-244; for the name Epaphroditus see *IGRR* I.1255 = *OGIS* 678 and *IGRR* I.1256 of Hadrianic date from Mons Claudianus; *O. Petr.* no. 290 of 22 July A. D. 62. See also chapter 4.

[55] O. Guéraud (1942):141-196.

[56] E. Littmann and D. Meredith (1953):26; see also E. Littmann and D. Meredith (1954): 211-246; Ch. Clermont-Ganneau (1919):1-29; L. A. Tregenza, J. Walker (1949b):151-158.

[57] On Rufus see *AE* 1910, 207 = V. Ehrenberg, A. H. M. Jones (1955):113, no. 232; on the freedman of the *PMB* of A.D. 14 see *IGRR* I. 1235; on the freedman of Rufus see *IGRR* I.1236 = *OGIS* 660 in A.D. 18; on Roman auxiliary troops in the Wadi Hammamat see *IGRR* I.1241 of A.D. 64-65 and *IGRR* I.1243 in Domitianic times.

road in A.D. 6 in connection with his duties as tax farmer of the *vectigalia* of the Red Sea.[58]

Other inscriptions refer to the construction or repair of roads and water points in the Eastern Desert by the army which facilitated the Nile-Red Sea caravan trade, or to *praefecti* who governed the area. L. Pinarius Natta was a tribune of Legio III Cyrenaica and *PMB*. L. Junius Calvinus visited the colossae of Memnon in Thebes with his wife in March 72.[59] Pliny (*NH* 6.26.103) mentions a garrison at Vetus Hydreuma before 77. This was not unusual considering that it was a large station on the Coptos-Berenice road capable of accommodating as many as two thousand travellers.

A Latin inscription on the Coptos-Berenice road describes how the Prefect of Egypt ordered the *PMB* M. Trebonius Valens to repair or enlarge the Afrodito station in *c*. 83-84.[60] This is important for it indicates that the *PMB* took orders directly from the Prefect of Egypt and reveals frequent use of the station. The Coptos Tariff of A.D. 90[61] lists the tolls charged civilians and some items transported on the Eastern Desert roads. The inscription was set up by the *alabarch* under orders from the *PMB* and may show that the *alabarch* was a financial officer in the district controlled by the *PMB*. The tariff is evidence for frequent traffic on the Eastern Desert roads and of military administration of the region up to A.D. 90. It further suggests that the *PMB* issued this tariff to increase revenues and help monitor traffic in the Eastern Desert.

The construction of roads, forts, water points and ports was not all the Romans did in Egypt to facilitate their Arabia-India-Ceylon trade. They constructed at least one canal connecting the Nile with the Red Sea. The idea of linking the two bodies of water by canal was an old one and a number of canals had been excavated. Herodotus (2.158-159; 4.39; 4.42), Aristotle (*Meteorol.* 1.14 352b25), Agatharchides (in Dio. Sic. 1.33.7-12), Strabo (17.1.25-26), Pliny (*NH* 6.33.165-166) and Claudius Ptolemy (4.5) discuss the earlier Nile-Red Sea canals and their builders. Although Darius I and Ptolemy II built such canals, ancient authorities disagree about who was the first to do so. Part of the confusion may be that rulers responsible for dredging earlier canals were given credit for their initial construction. Such attributions resulted from honest error or flattery towards a ruler undertaking such a project. There is no consensus on exact termini or lengths of the canals. Part of this problem hinges upon positive identification of towns near which the canals passed and location of the canals'

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[58] On Eros see D. Meredith (1954b):283-284; on the freedman of Annius Plocamus see Pliny, *NH* 6.24.84 and D. Meredith (1953a):38-40.

[59] For Natta see *CIL* X.1129; for Calvinus see *CIL* III.32 = A. and É. Bernand (1960): 36-37.

[60] D. Meredith (1954b):284-286.

[61] *OGIS* 674 = *IGRR* I.1183.

termini.[62] Ancient sources disagree over canal depths and widths and these must have varied with each new dredging operation.

Trajan excavated the only Nile-Red Sea canal securely attributed to the Roman period. The course of this canal is debated, but an ostracon from Thebes dated to A.D. 112 mentions the *Potamos Babylonos*. The *Potamos Babylonos* and the *Amnis Traianus* may be one and the same; Trajan's canal may have terminated on the Nile at Babylon south of Cairo. The Trajanic canal was probably the reopening of an older one which had fallen out of use. Ptolemy (4.5) mentions Trajan's canal, and Lucian's account (*Alexander or the False Prophet*, 44) of sailing from the Nile to Clysma must refer to the *Amnis Traianus*. Papyri discuss repairs made on the canal in A.D. 287 and 332 and there are references to it in the fifth and eighth centuries. In the ninth century the Arab writer Al-Maqrīzī says that the canal was still navigable and he attributes one dredging of it to Hadrian,[63] perhaps as a result of damage incurred during the Jewish revolt of 115-117.

The Nile-Clysma canal was important to Rome's trade with South Arabia and South India. Its construction and repeated repair show that the preferred ports-of-call to the south, especially Myos Hormos and Berenice, did not totally monopolize shipping. References to the canal's upkeep in the third, fourth and subsequent centuries indicate that the more southerly Egyptian Red Sea ports no longer functioned, or operated only on a very reduced scale, and that Clysma had become the main Egyptian port for the Arabia-India commerce. Excavations at Clysma reveal that the port prospered from the fourth century on and that maintenance of the canal connecting it with the Nile and Alexandria was pivotal to this.

The sea was important to Rome's South Arabia-India-Ceylon trade, but little is known about provisions made for protecting merchant vessels from piracy or for aiding them in natural disasters. There must have been some Roman naval presence in the Red Sea. The idea of a fleet to protect commerce on the Red Sea was well established. There had been an Egyptian fleet on the Red Sea in Pharaonic times and the Ptolemies also had forces there to protect commerce.[64] Several questions about Roman maritime activity must be

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[62] F. Oertel (1964):18-51 on the Nile-Red Sea canals of antiquity; C. Bourdon (1925): *passim*; E. Naville (1902/1903):66-75 for Ptolemy II's canal.

[63] In general for Trajan's canal see A. Calderini (1920): 42-44; P. J. Sijpesteijn (1963):70-83; P. J. Sijpesteijn (1965):106-113; H. Kortenbeutel (1931):67; W. Müller (1958):211-212, no. 32; for references to the canal in the third century see A. E. R. Boak and H. C. Youtie, eds. (1960):313-317, no. 81 = *SB* V, 7676; for A.D. 332 see *P. Oxy.* 12.1426; for later references see *PSI* 87 of A.D. 423; *PSI* 689 of A.D. 420/421, 423; *P. Lond.* 1346 of A.D. 710; for a ninth-century reference to the canal see Sijpesteijn (1963):73; for possible Hadrianic repairs of the canal see P. J. Sijpesteijn (1963):74.

[64] On the Pharaonic Red Sea fleet see C. Bourdon (1925):51; on the Ptolemaic fleet on the Red Sea see *OGIS* 132 of *c.* 130 B.C.; C. Bourdon (1925):129; M. J. Lesquier (1918):75 and 258.

raised. If there was a Roman "classis" was it a military or civilian commercial fleet? When was it established? Who commanded it and what was its sphere of influence?

The Romans may have established a naval squadron on the Red Sea early in the reign of Augustus. Strabo relates that Aelius Gallus constructed a fleet composed of the wrong type of ships for his Arabia expedition.[65] These ships, some of which seemed altogether unnecessary for the campaign, may have formed the nucleus of a Roman squadron. Strabo mentions Myos Hormos (17.1.45), where Gallus disembarked his Arabia expedition, as a naval station. Perhaps the squadron used Myos Hormos as a regular port of call. The story of the freedman of Annius Plocamus collecting the *vectigalia* of the Red Sea (Pliny, *NH* 6.24.84) may imply that there were land and sea forces to protect tax gatherers *(publicani)* for they and military or provincial officials often aided one another especially when officials were equestrian in rank. *Publicani* were often equestrians themselves as were most of the *PMB* that we know of.[66]

*Petrie Ostracon* no. 279, dated September 16, A.D.52, from Myos Hormos provides further evidence of Roman maritime activity on the Red Sea:

> Satornilus tessararis helmsman(?)...[67]

The title *tessararis/tesserarius* could have military implications. He could be sergeant of the watch whose job only began when the ship was in port or on shore. Alternatively, he could be a military officer whose main duty was to transmit written orders from a commander to his troops. In the fourth century the tesserarius served as a civilian village official in Egypt. The Satornilus ostracon attests the use of a military title by a sailor aboard a ship on the Red Sea, but it does not follow that the term tesserarius and its variants were solely military ones. A *tesserarius* could have a non-military meaning: he could transmit a master's order to his slaves.[68] The term might have applied to a guard of a

[65] D. Kienast (1966):84 believes that there was no Roman Red Sea fleet. Strabo 16.4.23: πρῶτον μὲν δὴ τοῦθ' ἁμάρτημα συνέβη τὸ μακρὰ κατασκευάσασθαι πλοῖα, μηδενὸς ὄντος μηδ' ἐσομένου κατὰ Θάλατταν πολέμου. οὐδὲ γὰρ κατὰ γῆν σφόδρα πολεμισταί εἰσιν, ἀλλὰ κάπηλοι μᾶλλον οἱ Ἄραβες καὶ ἐμπορικοί, μήτι γε κατὰ θάλατταν. ὁ δ' οὐκ ἔλαττον ὀγδοήκοντα ἐναυπηγήσατο δίκροτα καὶ τριήρεις καὶ φασήλους....γνοὺς δέ διεψευσμένος ἐναυπηγήσατο σκευαγωγὰ ἑκατὸν καί τριάκοντα, οἷς ἔπλευσεν ἔχων περὶ μυρίους πεζούς....

[66] D. Meredith (1953a):38-40; E. Badian (1972):82ff; *PW*, supplement XI: columns 1184-1208 *s.v.* "publicani"; the *PMB* was, himself, an equestrian judging by the eight or nine men known to have held the office.

[67] *O. Petr.* 279: Σατορνῖλος τεσσαράρις κυβέρ.

[68] M. I. Rostovtzeff (1931):25; C. G. Starr (1975):59, 193 and n. 98, 206-207 knows of only one *tesserarius*: *CIL* XI.6107 dated A.D. 246. H. G. Liddell and R. S. Scott (1953):1778 define τεσσαράριος as one who received and distributed the watchword from the commander. On the non-military meaning of *tesserarius* see Tacitus, *Hist.* 1.25 and *CIL* VI.8663 mentioning "Symphoro tesserario ser(vo) Caesaris de domo Gelotiana". According to G. Boulvert (1970):34 a *tesserarius* could also transmit a master's orders to his slaves; as a fourth-century civilian village official see A. E. R. Boak (1951):322-335.

civilian ship on shore. The ostracon indicates that Satornilus was stationed aboard a ship calling at Myos Hormos, but does not clearly reveal whether that ship was a military one.

Numismatic evidence from India, archaeological evidence from Egypt and literary sources indicate that trade increased with South Arabia and South India under Tiberius and his successors. This expanded trade probably required naval units to patrol sea lanes and act as a coast guard. Pliny (*NH* 6.26.101) mentions archers aboard ships protecting merchants from pirates. We cannot be certain whether these archers were hired by the merchants or supplied by the Roman military. Pliny's reference is too vague to determine whether archers rode aboard the merchant ships or on war galleys which acted as escorts. A passage in Philostratus (*Vit. Ap. Ty.* 3.35) seems to confirm that merchant ships carried armed detachments. Ptolemaic practices may also provide a clue. The Pithom Stele indicates that the Ptolemies armed their transport ships in the Red Sea.[69] If the Romans did the same, there would have been less need for naval forces in the region.

It is unlikely that Roman naval units in the Red Sea ranged as far south as the Bab el-Mandeb on a regular basis. A.W. Gomme demonstrated that ancient warships had little extra space to carry food and water because of their relatively small sizes and large crews. Consequently, they had to put to shore approximately every twenty-four hours or so to rest and feed the crews.[70] This required a friendly or neutral coast which could provide supplies. As there were desolate coastal regions for a great distance south of Egypt, it is doubtful, because of supply problems, that Roman warships could sail as far as the Bab el-Mandeb without accompanying transport ships. Certainly they could not accompany the merchant ships using the monsoon from South Arabia to South India, which necessitated a forty-day sail across open, often rough, waters according to Pliny (*NH* 6.26.104). The supply problems encountered by ancient warships in this instance would have been insurmountable. This explains why merchant ships used archers as protection on the high seas and in foreign coastal waters, regions beyond the range of Roman warships.

Strabo's reference (17.1.13) to fleets trading with Arabia and India leads to speculation that the *classis Maris Rubri*, the Red Sea fleet, might be a merchant fleet. Seneca (*Ad Lucilium Epistulae Morales* 77.1) uses the term *classis* to refer to a commercial civilian fleet carrying grain from Egypt to Italy in the first century. Furthermore, late antique accounts of a Trajanic fleet in the Erythra Thalassa[71]

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[69] On the Pithom Stele see E. Naville (1902/1903):66-75 and C. Bourdon (1925):129.

[70] M. I. Rostovtzeff (1907-1908):298-315 believes that Roman naval units could have patrolled as far south as the Bab el-Mandeb; on the limitations of ancient warships see A. W. Gomme (1937):192ff.

[71] Eutropius, *Breviarium Historiae Romanae* 8.3; Festus, *Breviarium* 20; on this controversy see H. Kortenbeutel (1931):66-67.

may not refer to the Red Sea, but rather to the Persian Gulf. However, the term "fleet" may exaggerate the size of the naval detachment Trajan established there. Its length of duty would have been quite short in any event, terminating when Hadrian returned Mesopotamia to the Parthians.

An inscription from Medamoud, Egypt seems, at first glance, to refer to a post-Hadrianic prefect of the Roman Red Sea squadron. The term *eparchos* appears in the inscription, but the words *klassis* and *Erythra Thalassa* do not. It is difficult to find parallels. Although another Greek inscription, *IGRR* I.1370, preserves the term *klassis*, it does not contain Erythra Thalassa thus making a specious comparison.[72] The contents of the Medamoud inscription, further described in chapter four, are commercial and civilian in nature. Therefore, we must conclude that the term *eparchos* like *tesserarius* and *klassis*, had civilian as well as military applications. In the case of the Medamoud inscription *eparchos* seems to refer to the leader of a privately operated mercantile "fleet" perhaps on the Red Sea.

Arguments favoring a Red Sea military fleet are based on three inscriptions, *IGRR* I.1062, 1370 and *ILS* 8851. None mentions Erythra Thalassa[73] nor do they collectively demonstrate the existence of a Red Sea military fleet.

Whether the *classis Maris Rubri* was a military or civilian fleet remains uncertain. Perhaps the term, if used at all in the first and second centuries, was loosely applied to any Roman ships travelling in groups in the Red Sea. There was little need for a large military squadron on the Red Sea, which would have had a limited range of operation and would have encountered only the South Arabs who were known, or at least considered, to be poor mariners (Strabo 16.4.23). Further excavation at the Egyptian Red Sea ports may reveal more information needed to answer these questions concerning the Roman *classis Maris Rubri*.

### *Judaea and Nabataea/Provincia Arabia*

Several scholars have suggested that the improvements in Egypt were part of a Roman effort to divert trade from Nabataea directly to Egypt.[74] Evidence from Judaea and Nabataea/Provincia Arabia, however, refutes this theory. Josephus suggests that the Roman efforts in Egypt were meant to complement,

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[72] See P. Jouguet (1931):27=*SEG* 8.703=*SB* X, 7539; for a parallel using ἔπαρχον κλάσσης see *ILS* 8851 from Pannonia or Moesia Inferior. P. Graindor (1931):31-32 sees the κλάσσης as referring to a private merchant fleet.

[73] M. I. Rostovtzeff, *SEHRE* :155 and H. Kortenbeutel (1931):70-71 both favor a Roman military fleet on the Red Sea.

[74] P. Jouguet (1931):18-19; G. W. Bowersock (1971):228; A. Negev (1963):117; A. Negev (1977): 561-562; D. F. Graf (1978): 6-7; M. P. Charlesworth (1974):63; M. I. Rostovtzeff (1907-1908): 306-307, yet in *SEHRE* :157 he recognized that the Egyptian Red Sea ports did not eliminate all caravan trade in Arabia; J. Starcky (1955):94; P. C. Hammond (1973):22.

not eliminate, the trade from South Arabia via Nabataea. According to Josephus (*BJ* 1.416) Herod built a new port at Anthedon (Agrippium) near Gaza. Herod also constructed a new city and well-protected harbor, at least as large as Piraeus, between 22 and 10 B.C. on the site of Strato's Tower, calling the place Caesarea Maritima.[75] Numismatic evidence indicates that the port itself was called Sebastos. Underwater excavations carried out by the Caesarea Ancient Harbour Excavation Project since 1980 have revealed that typically Roman construction methods were used to build the mammoth breakwaters of the port. In 1982 underwater excavations unearthed a wooden coffer into which concrete had been poured. This according to Vitruvius (*De Architectura* 5.12) was a standard method of breakwater construction in the Augustan period.[76] Quinquennial games, held for the first time in 10/9 B.C., celebrated the completion of construction.[77]

Some observations can be made about Caesarea based on literary testimony. Herod told the Jews in his realm that a higher authority ordered him to embark on ambitious building projects in both foreign and surrounding territories. In this way Herod hoped to placate the Jewish population, blaming pagan construction on a higher authority, perhaps Augustus, with whom he had a cordial patron-client relationship.[78] Augustus may have ordered or strongly encouraged the Herodian building activities at Caesarea Maritima in part to stimulate commerce.

Caesarea may have been built as a major eastern Mediterranean port which could handle caravan traffic coming from South Arabia. Caesarea's construction began soon after Gallus' expedition and the two events may be related. Strabo, (16.4.23; 16.2.20) a contemporary of Herod's, says that caravans continued in large numbers from South Arabia to Nabataea and undoubtedly to the Mediterranean ports. Pliny notes (*NH* 12.32.63ff) a lively caravan trade between Petra and Gaza in his day, and the vitality of the Nabataean station at Hegra (Medain Saleh) is evidence for continued caravan traffic in the first and early second centuries. Recent excavations in caravansaries along the Petra-Gaza road revealed that this route was used continuously between the third/

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[75] See Josephus *AJ* 15.326-341; *BJ* 1.156; 1.408-415; L. Kadman (1957):45; for a description of the site in the late nineteenth centrury see C. R. Condor and H. H. Kitchener (1882):13-29; see also B. Lifshitz (1977):490-518; L. I. Levine (1975a); A. Frova (1961-1962): 649-657; L. I. Levine (1975b); J. Ringel (1975); A. Reifenberg (1950-1951):20-32; G. Foerster (1975):9-12.

[76] R. L. Vann (1983):10-14.

[77] Josephus, *BJ* 1.415.

[78] Josephus, *AJ* 15.330: Ἰουδαίοις μὲν ἀπολογούμενος μὴ καθ' αὑτὸν ἀλλ' ἐξ ἐντολῆς καὶ προσταγμάτων αὐτὰ ποιεῖν, Καίσαρι δὲ καὶ Ῥωμαίοις τὸ μηδὲ τῶν οἰκείων ἐθῶν ὅσον της ἐκείνων τιμῆς ἐστοχάσθαι χαριζόμενος,...
On the importance of clients to Augustus see S. Jameson (1968):82-84; for Herod's building program outside Judaea see S. Applebaum (1977):373; E. M. Smallwood (1976):80-81.

second centuries B. C. and Byzantine times.[79] Caravans taking the westernmost route north from Arabia Felix passed through Petra, then to the coast to Gaza or Caesarea, from which their goods were shipped to other parts of the Roman world. However, we cannot determine at this time whether this route continued to be used by merchants trading with South Arabia after the second century. Traffic along the Petra-Gaza road after the second century may have been local, not "international" in scope.

Caesarea was an important port throughout the Roman period because it was one of the few good ports along the Levantine coast, a littoral with few, if any sizeable natural harbors (Josephus, *AJ* 15.333). Literary sources refer to ships sailing between Caesarea and Tyre, Sidon, Tarsus, Cilicia, Samos, Ephesus and Rome. Trade between Caesarea, Alexandria, Pelusium and Cyprus and commercial ties eastward with Samaria, Galilee and the Jordanian caravan cities and Babylon[80] made Caesarea an economic crossroads between the eastern and western Mediterranean and between ports in Asia Minor, Syria and Egypt. Archaeological excavations at Caesarea which have unearthed many sorts of imported ceramics from Italy, North Africa, Greece, Asia Minor and Cyprus verify Caesarea's position as a trade emporium with Mediterranean-wide connections.[81] Caesarea marketed a wide variety of foodstuffs and merchandise. Thus, as a large port and manufacturing center, Caesarea greatly facilitated commerce of all types and helped unite the disparate economic zones of the empire.

Construction of a large port at Caesarea also facilitated the import of food to Judaea. Grain sent from Egypt at Herod's request (Josephus, *AJ* 15.307) alleviated food shortages caused by a plague. This occurred in the 20s B.C., prior to Caesarea's construction, and may have highlighted the need for a port at Caesarea. Judaea again suffered famine in about A.D. 45 and imported grain from Egypt, no doubt through the port of Caesarea Maritima.[82] Caesarea facilitated emergency grain imports to Judaea should they be necessary. Concerns for personal safety might also have been a factor in Herod's construction of Caesarea. This may explain why it was fortified.

Construction of these various facilities—ports, roads, etc.—in Judaea is further evidence that trade was expected to grow or actually had grown so much that it required additional means to handle the volume. Trade was shared between the Egyptian Red Sea ports and the entrepots of Nabataea and Judaea.

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[79] R. Cohen (1982):240-247; see also A. J. Jaussen and R. Savignac (1909):192-291 for inscriptions from Medain Saleh indicating its prosperity in the first and second century; Negev (1977):563ff; for a nineteenth century view of Medain Saleh see R. F. Burton (1879) 221-233.

[80] Josephus, *BJ* 1.543; 1.610-613; *AJ* 16.62; 17.86-87; 17.219-223; *Acts of the Apostles* 9:30; 18:21-22; 21:7-8; 27:1-13; Levine (1975b):17; J. Rougé (1966):18-105.

[81] Publication forthcoming: S. E. Sidebotham (1986):on pottery.

[82] Josephus, *AJ* 20.51; 20.101; see G. Rickman (1980):70.

Soon after Roman annexation of Nabataea as Provincia Arabia in A.D. 106—and there is some debate whether the Romans accomplished this annexation peacefully or not—Trajan built a major highway between Bostra, the legionary headquarters and capital of the new province, and the Red Sea (Gulf of Aqaba) port of Aila. Numerous milestones refer to its construction.The road formed part of the *limes* system of Provincia Arabia, and it followed the line of an earlier Nabataean road or caravan route. In the first century caravans coming from South Arabia via Hegra, Ruwaffa and Qurayya reached the Wadi Ramm and proceeded to Petra and Gaza; there was another route which reached the coast at 'Aynunah (Leuke Kome), then north to Aila and on to Petra.[83]

The Wadi Sirhan was also an ancient route which might have favored traders coming from Gerrha on the Persian Gulf. It debouched in the north in the Azraq depression. A road from Azraq ran north and forked one way to the main Damascus-Palmyra road and the other route went towards Bostra and the Via Nova.[84] Pottery from Wadi Sirhan closely parallels that from Transjordan and Palestine,[85] indicating possible contact between these regions. Anyone using the Wadi Sirhan found the Via Nova Traiana of little value when crossing immediately to the coast. However, a road built between the Decapolis and Caesarea by Trajan's father, while he was governor of Syria in 69 under Vespasian,[86] was a natural extension of the Wadi Sirhan route and facilitated travel to the coast.

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[83] On the question of the peaceful annexation of Arabia see G. W. Bowersock (1983): 79-81; G. W. Bowersock (1970):37, 44-45 on whether Bostra or Petra was the first capital of Provincia Arabia; H. I. MacAdam (1979):14 suggests that Bostra was the summer and Petra the winter capital of Nabataea. There is no doubt that Bostra was the capital of Provincia Arabia. This is shown by J. T. Milik (1958): 244-246 in a bilingual Nabataean-Greek inscription: in Nabataean "The year three of the governor of Bostra;" in Greek "The third year of the province." On the milestones see *ILS* II.5834=*CIL* III.14149.21 (these milestones exist in great numbers); in general on milestones from the region see P. Thomsen (1917):34-57 discusses the route Bostra-Aila listing milestones found along the road; on the road as part of the *limes* system see D. F. Graf (1978):1-3; B. Isaac (1980):889-901; G. W. Bowersock (1971): 237-238; on the route that the road took see G. W. Bowersock (1971):238ff Yet in the Roman period a 70 km. stretch of the road north of Aila was unprotected by any military zone to the east. D. F. Graf (1978):3-5 points out that locally recruited *foederati* and auxiliary troops were stationed here, not legionaries. See also D. F. Graf and M. O'Connor (1977):54. Desert terrain north and northeast of Aila was not a sufficient buffer zone in itself as the presence of Nabataean fortifications in the region reveals; on Gaza as a terminus of the South Arabia trade see M. A. Meyer (1907):162-165; in general on Gaza in the Roman period see *ibid.* 55-72; also on Gaza see W. M. F. Petrie (1931, 1932, 1933, 1934).

[84] F. V. Winnett and W. L. Reed, *et al.* (1970):71-87; Bowersock (1983):154-159; N. Glueck (1944):7-17 also discusses the trade route through the Wadi Sirhan; see also M. L. Ingraham, *et al.* (1981):79-80; M. Sartre (1982):17; J. Starcky, R. Savignac (1957):212-213; D. L. Kennedy (1982):69, 134, 243; Pliny, *NH* 5.12.65; 12.32.63ff.

[85] F. V. Winnett and W. L. Reed, *et al.* (1970):180-182.

[86] On the Decapolis-Caesarea road see B. H. Isaac (1980):893; B. H. Isaac (1978):47; M. Sartre (1974):88 shows that Roman citizenship was given to inhabitants of the Decapolis

The Petra-Gaza road continued in use in the second, third and subsequent centuries[87] although the volume and nature of the traffic using this route is unknown. Simultaneously there was a rise in the economic fortunes of the Decapolis due to its location along routes from South Arabia via the Wadi Sirhan, Petra and the Euphrates via Palmyra. In 75 Trajan's father built a road from the Euphrates to the Decapolis via Palmyra which undoubtedly stimulated Decapolitan growth. The road also brought increased prosperity to Palmyra.[88]

Hadrian's visit to Arabia in 129-130 resulted in the connection of the Trajanic Via Nova with the road system in Palestine.[89] This further facilitated trade within the region and between the hinterland and the coastal cities. Decapolis prosperity in the second century, together with continued use of the Petra-Gaza road, are indications that the Egyptian Red Sea ports did not monopolize the South Arabia-South India-Ceylon trade to the detriment of Judaea-Nabataea/Provincia Arabia, but merely supplemented points of entry to the empire which the increased volume of trade necessitated.

Caravan routes from South Arabia via Petra may have temporarily lost ground to routes via Egypt and the Decapolis-Palmyra due to economic factors. There seems to have been some disruption in the mid to late first century in the trade patterns in the northwest Arabian peninsula. We do not know the cause of this disruption, but it appears that trade from South Arabia went increasingly by ship to the Egyptian Red Sea ports while some caravan routes shifted eastward, passing through Palmyra. Since Bostra and other cities of the Decapolis were connected to Palmyra by road, they benefited too. Caesarea also prospered, being the largest port on the coast nearest the Decapolis, with which it was directly connected by road.[90]

Economically, the Egyptian route offered inexpensive water transportation for most of the journey from South Arabia to the Mediterranean. Cheaper sea-borne commerce had the potential to destroy the more expensive caravan

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during the Jewish revolt of 66-70. No doubt the road built by Trajan's father from the Decapolis to Caesarea had, as its initial purpose, the movement of troops during this conflict. In this regard see B. Isaac and R. Roll (1982):6, 15, 66, 91.

[87] R. Cohen (1982):240-247.

[88] On the economic prosperity of the Decapolis see C. H. Kraeling (1938):39-56 who details that city's prosperity in the first and second centuries. Its fortunes reflect those of the Decapolis as a whole. On the Euphrates-Decapolis road see B. H. Isaac (1980):893; H. Seyrig (1932):276-277 cites the text of a milestone and notes that it was discovered 27 km. from Palmyra; for the elder Trajan's close relations with Vespasian see B. H. Isaac, I. Roll (1976):15-19; on the prosperity of Palmyra see I. A. Richmond (1963):43-54.

[89] D. F. Graf (1978):7; B. H. Isaac and I. Roll (1982):91.

[90] On the disruption of trade see A. Negev (1969):5-14 who indicates a general northward migration of nomads as being responsible for disruption of the trade patterns, but D. F. Graf (1977):64-65 disagrees. The cause for this disruption remains uncertain; on the shifting trade routes see H. I. MacAdam (1979):196; see J. Ringel (1975):147-148 on Roman roads radiating from Caesarea.

trade via Nabataea. Goods coming from South Arabia moved more quickly by sea—thirty days or less according to Pliny.[91] By land it took much longer, about sixty-five days.[92] It was also very expensive: a camel load would cost about 688 denarii by the time it reached the Mediterranean ports.[93]

Despite the cost of land transportation, the Decapolis and other regions in northern Provincia Arabia flourished. The prosperity of these areas was due in part to their location on trade routes which continued in use. Whatever its military value the northern section of the Via Nova Traiana and its trunk routes greatly facilitated caravan traffic to the Mediterranean coast. Hadrian enhanced this role by tying them into the Palestinian road network. Construction of a Hadrianeum at Caesarea[94] may reflect local thanksgiving for the increased economic prosperity that the road systems brought to the city.

*Conclusion*

In many cases the Roman army, an important arm of the imperial government and the executor of government policy, constructed roads, water points and watch towers in Egypt, Judaea and Nabataea/Provincia Arabia which facilitated Erythraean Sea commerce. Military garrisons along the Eastern Desert roads between the Nile and the Red Sea provided shelter and protection to caravaneers from bandits and nomads and may also have monitored trade activity along the roads.

Strabo discusses Augustus' interest in the Arabia-India trade and Pliny indicates that a lively Rome-Arabia-India trade existed in his day. Increased military and civilian activity in and travel through the Eastern Desert from Tiberius on and expanded trade with India during his reign point to a sustained imperial presence in Egypt after its annexation. The Romans remained active on the Red Sea coast, in the case of Myos Hormos intermittently, until at least the Tetrarchic period.

Antinoë was an imperial foundation though the *raison d'être* for its location and for the road which led to the Red Sea ports is unclear. The Egyptian Red Sea ports, with the exception, it seems, of Leukos Limen, were Ptolemaic foundations. More excavation is needed in order to discern the extent of

[91] Pliny, *NH* 6.26.104.

[92] Pliny, *NH* 12.32.64.

[93] Pliny, *NH* 12.32.65.

[94] On the prosperity of the Decapolis see D. F. Graf (1978):3ff; A. J. Jaussen and R. Savignac (1909):192-291; C. H. Kraeling (1938):39-56; A. Negev (1976b):203-236; P. J. Parr, *et al.* (1968-1969):193-242 and P. J. Parr, *et al.* (1971):23-61. On the Thaumudic confederation and the inscription of Ruwaffa see G. W. Bowersock (1975): 513-522; D. F. Graf (1978):9-12; G. W. Bowersock (1971):230-231; on the Hadrianeum at Caesarea see L. I. Levine (1975a):42; L. I. Levine (1975b):21; G. Foerster (1975):16-17; G. Downey (1975a):37-38; J. Ringel (1975):44-45 discusses the controversy concerning attribution of the Hadrianeum – whether it was dedicated to the emperor or to a martyr of A.D. 310.

imperial involvement in their construction, maintenance, protection and operation. Forts at Myos Hormos and near Berenice suggest that troops were stationed there. A military unit was stationed at Leukos Limen, the best known of the Red Sea ports, and imperial freedmen conducted business there. Beyond these indications, the imperial government's role there can only be hypothesized. The Hippodamian plan of the site at its foundation indicates that it was laid out at one time by a powerful, organized authority capable of financing town and port construction at the edge of the desert. This was the case with Myos Hormos and Berenice. In the Roman period, the imperial government was probably the only institution which had the resources for such undertakings.

The extent of Roman naval activity on the Red Sea is unclear. The term *classis Maris Rubri*, at this stage of our knowledge, seems to be a fourth-century exaggeration of the size of the civilian merchant fleets or naval forces operating in the region. The Pithom Stele says that archers rode on merchant ships in the Red Sea in the Ptolemaic period. This, according to Lucian, was also the case with Roman commercial vessels.

We do not know who actually ordered the construction of the port at Caesarea. Nor do we know what type of labor built Trajan's canal linking the Nile with the Red Sea. Josephus' reference to Herod's construction of Caesarea and other places beyond his political jurisdiction is intriguing. Given this statement and the Romanness of Caesarea, we suspect that the Roman government had a hand in the work. Though no source informs us, it is likely that the Roman army or corvée under army engineers built the *Amnis Traianus* in Egypt.

The evidence indicates direct imperial involvement in some major building improvements made within the empire facilitating Rome's trade with South Arabia-South India and Ceylon. These included roads, water points and garrisons in the Eastern Desert of Egypt. Construction or repair of other facilities such as the Egyptian Red Sea ports or Caesarea Maritima may have been government sponsored though the evidence at hand does not verify this. At present the extent of imperial involvement in these improvements is unclear, but future excavation will undoubtedly provide additional answers. The Roman army constructed road systems in Judaea, Syria and Provincia Arabia for military purposes. However, these routes also facilitated commerce in and through the region.

## CHAPTER FOUR

# REGULATIONS, TRADERS AND TAXES

A study of the Roman government's regulation, organization, and taxation of the Erythraean Sea commerce is essential to analyzing Rome's economic policy in the area. However, there is little information from inside the Roman empire itself bearing on these aspects of Erythraean Sea commerce or regions where Rome traded: Nabataea, South Arabia, South India and Ceylon. A few literary references and some sketchy archaeological evidence from Egypt provide most of the testimony from the Roman side; a single passage in the *Periplus Maris Erythraei*, a handful of South Arabian inscriptions and some vague references in Tamil authors are the only extant references by non-Romans to this traffic. Pali sources from Ceylon are silent regarding this commerce and archaeological evidence from outside the Roman empire—which reveals a highly regulated commerce in other Erythraean Sea lands—sheds little light on the issues at hand.

The extent of the Roman government's facilitation and regulation of Erythraean Sea commerce inside Egypt is uncertain, but archaeological and epigraphic evidence suggests that trade was closely supervised. Next to nothing is known of Roman regulation of Erythraean Sea commerce passing through Nabataea/Provincia Arabia or Judaea.

Literary and archaeological evidence reveals that individuals of diverse rank engaged in trade throughout the Roman empire and in the Erythraean Sea commerce. However, traders in general seen to have been "small fry."[1] The Roman government—traditionally characterized as practicing a *laissez faire* economic policy—also seems to have been an active participant—as we shall see—in the Erythraean Sea trade though the extent of its direct involvement is uncertain.

The Roman government gleaned revenues from the Erythraean Sea commerce in the form of tolls, duties and tariffs *(portoria)* levied on the imported goods themselves and in some cases on the traders, their vehicles and pack animals. However, there is scant evidence for the rates levied by the government on the traders and their wares and little is known of the tax collectors themselves, how they operated or where they collected revenues on the Erythraean Sea trade.

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[1] J. H. D'Arms (1977):159-179; M. W. Frederiksen (1975):164-171 and J. Rougé (1966): 11-14; Finley (1973):60, 144-145; cf. Pleket (1983):131-144 discuss this at length.

A very fine, often indistinguishable, line separates Roman governmental facilitation from regulation of trade. The construction and placement of installations that we examined earlier may reflect governmental efforts to facilitate Erythraean Sea commerce, but do they indicate government regulation of trade?

Most of the Egyptian Red Sea ports were Ptolemaic foundations. Literary and archaeological data already cited point to Roman military activity at several of these ports, but they do not prove that the Roman government/military was responsible for their repair, expansion, or in the case of Leukos Limen, initial layout. Although Roman military units were stationed in these ports, their purpose there in the first, second and third centuries is unclear. They may have protected tax collectors or monitored the import and export of cargo. The tasks of Roman naval units in the Red Sea are also uncertain. The most likely explanation is that they facilitated trade by acting as a coast guard that patrolled sea lanes near the ports.

Archaeological evidence presented earlier indicated that the Roman military constructed, maintained and patrolled the Eastern Desert roads and stations along them. These installations guaranteed security of communication and facilitated trade and encouraged it to grow by making the Eastern Desert passage between the Nile and the Red Sea ports as safe and pleasant as possible. The government undoubtedly profited from such undertakings. As a result of the increased volume of commerce the government reaped additional income from import duties and other tolls levied on wares arriving from South Arabia, India and Ceylon.

There may have been an additional reason for these installations. A number of the stations along the Eastern Desert roads were placed at one day's travel time from each other and some were even closer. Frequently a traveller or caravan could visit two or three stations in a single day. Such propinquity suggests that the stations had a purpose beyond that of shelter. Their locations may indicate that the Roman military monitored trade or checked passes authorizing civilian use of the roads.

Entry and exit points were more tightly controlled in Egypt than in other Roman provinces. The ban on senatorial visits to Egypt without imperial permission is well known.[2] Regulation of movement out of Egypt seems to have extended to people of lesser rank and may have included traders. Strabo (2.3.5) indicates that in both Ptolemaic and Roman times one required a pass *(prostagma)* to leave Alexandria. However, Strabo does not specify who was eligible for a *prostagma*. The *Gnomon of the Idios Logos*, a mid second century century fiscal document, says that heavy fines were imposed on an Egyptian

[2] Tacitus, *Ann.* 2.59; see also M. A. Levi (1924):231-235; D. G. Weingärtner (1969):29ff for further discussion.

or his slave who left Alexandria or Pelusium without a pass. The text is fragmentary and does not reveal the type of pass required. A Roman citizen traditionally enjoyed freedom of movement throughout the empire, but he too needed a pass *(grammata)* to leave Egypt.[3] Though Roman authorities in Egypt may have attempted to control trade by issuing such passes, it is evident from the non-mercantile status of some who obtained the passes that their issuance may have been of more immediate fiscal interest to the government. Those requiring the passports may well have paid for them thereby generating additional revenues for the *fiscus*.

The *Gnomon of the Idios Logos* also refers to a pass *(apostolos)* required to sail from Egypt, but it does not specify to whom it was issued. *Papyrus Oxyrhynchus* 1259 reveals that the *apostolos*, a customs certificate drawn up by the procurator, consisted of an identity card for a sailor and instructions to local authorities concerning a grain shipment. It would seem, then, that the *apostolos* differed from the *prostagma* and the *grammata* in that it was a pass not only for a person, but also for his wares. The *Gnomon of the Idios Logos* refers to another kind of pass *(anapostolos)* required of a person or his slave leaving Egypt. Unfortunately, the status of the individual requiring this type of pass is not specified. *Papyrus Oxyrhynchus* 1271 of A.D. 246 is an application of a woman from Side in Pamphylia (Turkey) to the prefect of Egypt for permission to leave the province from Pharos. She was granted leave, but the type of pass she obtained is unclear.[4]

These examples show that persons exiting Egypt in the Roman period required passes of different kinds. The type of pass issued seems to have depended on nationality—Roman, Alexandrian, Egyptian—and whether or not one was also shipping goods. One obtained these passes from the procurator or Prefect of Egypt. Perhaps each of these officials controlled the distribution of different types of passes. Unfortunately, other than the ban on senators entering Egypt without special permission, nothing is known of the regulation of movement into Egypt by lower ranking individuals.

The Coptos Tariff (*OGIS* 674) of A.D. 90 may reveal the use of passes for travel inside Egypt. The Coptos Tariff refers to the use of Eastern Desert roads connecting Coptos to the Red Sea ports. Since the government protected and maintained these roads[5] and the fees described in the inscription were

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[3] On the date of the *Gnomon* see W. Schubart (1919):1, 4-5, P. R. Swarney (1970):119-122 dates this document to between 90-160 A.D.; for the fines imposed see Schubart (1919):27-28, nos. 64-69; W. G. Uxkull-Gyllenband (1934):63-69, nos. 64-69; E. G. Turner (1975):14-15 also briefly discusses these passes; on a Roman citizen see Schubart (1919):28, no. 68 and Uxkull-Gyllenband (1934):69, no. 68.

[4] For more on *Papyrus Oxyrhynchus* 1271 see P. J. Sijpesteijn (1981):108-109.

[5] On the roads see Pliny, *NH* 6.26.102-103; *IGRR* I.1142; *ILS* I.2483 = *CIL* III.6627 = *Eph. Epig.* V, 1884, 5 no. 15; L. Fiesel (1925):102ff.

levied by the *alabarch* under orders from the *PMB*, it seems that the government, through the military, was the beneficiary of the fees described in the tariff. The rates in the tariff varied for different groups of persons, vehicles and animals using the roads. The *apostolion* mentioned in the tariff may refer not to transit-toll or transportation charges,[6] but to a pass that authorized use of the roads. No such passes have come to light. However, a similar term for a pass *(apostolos)* in the *Gnomon of the Idios Logos* indicates that the Coptos Tariff undoubtedly also refers to a pass, probably one issued to a person for himself and his wares, as was the case in *Papyrus Oxyrhynchus* 1259. The Coptos Tariff's list is incomplete, but it most certainly did not record a tax on military use of the roads. These fees mentioned in the Coptos Tariff probably helped defray maintenance costs of the Eastern Desert roads and installations. Similar fees were probably paid at the Red Sea ports by those travelling to emporia on the Nile.[7]

In addition to generating income, these passes served as a means of regulation. They allowed the government to monitor the type and number of persons, vehicles, pack animals and wares travelling between Coptos and the Red Sea ports. The *Codex Justinianus* (4.41.2) specifies items in later imperial times which the government did not allow to be exported from the empire. Perhaps a similar ban existed in earlier times and these passes served as a check against the export of contraband.

The Roman government may also have regulated commerce along the Eastern Desert roads by stipulating which emporia on the Nile were centers of this trade. Archaeological and literary evidence suggests that in the Roman period only Coptos and perhaps later Antinoē and Dendereh were termini on the Nile for wares shipped to and from the Red Sea ports. The road from Edfu (Apollonopolis Magna) on the Nile to Berenice was somewhat shorter than that from Coptos to Berenice.[8] Although graffiti on rock outcroppings near the Pan temple at El Kanais on the Edfu-Berenice road indicate that this route was heavily travelled in the Ptolemaic period, the road was little used in early Augustan times or later.[9] No other Nile emporia are known to have had roads leading to the Red Sea ports except Coptos, Antinoē and Dendereh. Graffiti and archaeological evidence cited earlier indicate that roads leading from Coptos to the Red Sea ports became increasingly important from the Augustan-Tiberian period on.[10] Extensive building activity took

[6] S. L. Wallace (1938):468 n. 96.

[7] Wallace (1938):275 believes that the *apostolion* was originally a Ptolemaic institution; see also Fiesel (1925):97.

[8] R. S. Bagnall (1976b):35.

[9] A. Bernand (1972b):31.

[10] For the Coptos-Myos Hormos road see Strabo 17.1.45; D. Meredith (1956):356-362; C. H. O. Scaife (1936):55-64; for the Coptos-Leukos Limen road see A. Bernand (1972a):39,

placə at Coptos in the first, second and early third centuries. Together with the stationing of substantial Roman military units at Coptos beginning in the first century[11] and the concentration at Coptos of a sizeable mercantile community, this building activity suggests that Coptos was the Nile emporium through which most Erythraean Sea merchandise flowed in the first, second and third centuries. It is the main Nile emporium mentioned by Strabo (17.1.45) and Pliny (*NH* 6.26.102-103). Its location on the most important road junction in Egypt—north-south along the Nile to Alexandria and east-west to the Red Sea ports—dictated that it become and remain the major commercial clearing house of Erythraean Sea commerce. The concentration of many traders and their headquarters at Coptos, which we will examine below, must have facilitated government regulation and taxation of their activities.

Hadrian founded Antinoë—colonized by Greeks and Romans from elsewhere in Egypt to promote the Hellenization of this portion of Egypt. The new metropolis also supplemented Coptos as an emporium through which the Erythraean Sea trade passed. To enhance Antinoë's role in this commerce Hadrian built a road, the Via Hadriana, linking the new city with the Red Sea ports. If, as we suggested earlier, the overall volume of the Erythraean Sea commerce was greater in Hadrian's day than earlier, then a second Nile emporium at Antinoë may have been necessary. Unfortunately, little more is known of Antinoë's role as an emporium of Erythraean Sea commerce or of the value of the Via Hadriana as a commercial highway.[12]

Suetonius, among others, tells us that the Roman government encouraged and regulated ship owners or ship masters (*navicularii*) and other groups supplying necessities to the city of Rome.[13] There is no evidence, however, of governmental regulation of *collegia* or trade firms engaging in the Erythraean Sea commerce.[14] On the other hand, documentary evidence from Coptos, the Eastern Desert and Leukos Limen reveals that numerous individuals participated in this trade. Most of the evidence on Erythraean Sea traders and the composition of their firms comes from epigraphic sources in Egypt and pertains to persons residing inside the empire.

75-77, 78-79, 80-81, 92-93, 96-98, 98-99, 100-101, 101-103, 103-105, 106-107, 221-226; O. Guéraud (1942):141-196; for the Coptos-Berenice road see Pliny, *NH* 6.26.102-103; D. Meredith (1954b): 281-287.

[11] For building activity and military units at Coptos see A. J. Reinach (1911b):16-28, 61-63; A. J. Reinach (1911a):48-54, 79; M. J. Lesquier (1918):408.

[12] See chapters two and three.

[13] Suetonius, *Claudius* 18.2-19.1; Gaius, *Institutes* I.32C; Ulpian, *fragm.* III.6; *Dig.* 50.29.1; 50.4.5; 50.5.3; 50.5.9.1; 50.6.1; 50.6.6.3ff.

[14] E. Seidl (1973):194-196 and A. E. R. Boak (1937):212-220 discuss firms and guilds in Egypt, but do not deal with the Red Sea commerce.

One important source for the study of individuals trading in the region of the Erythra Thalassa is the *Petr.* (Nicanor) *Ostraca* archive from Coptos. The term company or firm here denotes one or more persons repeatedly mentioned in the ostraca, often over a number of years, who engaged in commerce between the Nile and the Red Sea ports. The best evidence for "trading companies" comes from shippers supplying the city of Rome with grain. These were not companies in the modern sense of the term. It seems that individuals put their money directly into a trading venture and not through their *collegia.* As far as we can determine liability was personal and not corporate. Often, in the city of Rome at least, such business firms, or partnerships, were expressed in the language of friendship *(amicitia)* and were usually of short duration. The concept of an agency was never systematically developed in Roman jurisprudence.[15]

This may also have been the case with merchants engaged in the Erythraean Sea commerce. These Egyptian firms were not large, well-defined companies, but small, loosely organized groups usually composed of friends or family members.[16] It is often difficult to discern the existence of a firm from the ostraca alone. The appearance of an individual in the ostraca is not, in itself, evidence that that person represented a firm. However, inscribed amphorae plugs and inscriptions from Coptos mentioning persons also attested in the ostraca suggest that these individuals operated businesses, we might call them firms, either alone or together with one or more associates. One can identify at least nineteen individuals or firms, including Nicanor's, by studying the nomenclature found on the ostraca, amphorae plugs and inscriptions from Coptos.[17]

The *Petr.* (Nicanor) *Ostraca,* plus two others—one from El Heita on the Myos Hormos road and *O. Brüssel-Berlin* 7[18]—indicate that the Nicanor firm included Nicanor son of Panes, his two brothers Philostratos and Apollos, Nicanor's two sons Miresis and Peteharpochrates and one female associate. With the possible exception of the last—Isidora daughter of Menodoros, who was probably not a family member—all were Hellenized Egyptians, Egyptianized Greeks or Graeco-Egyptians who resided in Coptos. Their repeated appearance over a number of years indicates that they were a firm.

The *Petrie Ostraca* reveal that persons from diverse geographic regions traded between the Nile and the Red Sea ports. A number of individuals or

[15] G. Rickman (1980):228-229; *Dig.* 50.4.5; 50.6.6.12; 50.4.9; cf. 19.2.13.1; for the city of Rome see J. H. D'Arms (1981):165.

[16] *O. Petr.*: e.g. for brother and brother: nos. 249, 250; 233, 240(?); 265(?); 262, 264; or father and son: nos. 221, 230(?); 227, 246; 261, 266, 271, 282(?); 239, 245, 279, 280, 285.

[17] Cf. *O. Petr.* which record individuals or related family members whose names appear at least twice: nos. 221, 230(?); 227, 246; 244, 257; 228, 229, 248; 231, 248, 249, 250(?), 255(?); 237, 238, 239, 240, 242; 233, 240, 265; 239, 245, 279, 280, 285; 247, 250; 251, 258, 279, 280, 285; 262, 264; 261, 266, 271, 282(?); 268, 270; 233, 241, 253; 275, 276; 288, 291; 288, 291; 255 256; those ostraca mentioning members of the Nicanor family.

[18] Meredith (1956):356.

groups did business with the Nicanor family or one of its agents. Egyptians, Greeks, Hellenized Egyptians, Egyptianized Greeks, Graeco-Egyptians and possibly one Hellenized South Arab were business associates of Nicanor. One of these entrepreneurs, Parthenios son of Paminis, was active at both Myos Hormos and Berenice between A.D. 26 and 42.[19] Coincidentally a Parthenios son of Paminis appears on inscriptions from Coptos dedicated to Isis and Cronos (*IGRR* I. 1172) in July 32.[20] Since the inscriptions and the ostraca that mention Parthenios were found at Coptos, one may infer that both record the same man. This Parthenios was apparently a businessman and citizen of Coptos who made dedications to various temples in the city.

The *Petrie Ostraca* also mention Roman citizens active in trade with Nicanor: Tiberius Claudius Agathocles at Myos Hormos,[21] Gaius Julius Bacchylus at Myos Hormos[22] and Gaius Norbanus at Myos Hormos.[23] Excavations at Coptos provide further evidence that Gaius Norbanus conducted business at the Red Sea ports. First century amphorae plugs from the Nile valley found at Coptos were inscribed with the name C. Norbanus. Ptolem.[24] The *Petrie* Ostraca and Coptos amphorae plugs very likely represent one and the same man and indicate that Norbanus had business interests at both Myos Hormos and Coptos.[25] It seems that his headquarters for trade with the Red Sea ports, like that of the Nicanor family, was at Coptos.

The *Petrie Ostraca* also mention the activities of Marcus Julius Alexander at Myos Hormos and Berenice between A.D. 37 and 43/44. Marcus was a Roman citizen and rich Jewish resident of Alexandria.[26] He was probably a relative of Tiberius Julius Alexander who was Epistrategos of the Thebaid in 42, Procurator of Judaea in *c*. 46-48, Prefect of the Roman army in Judaea, Prefect of Egypt under Nero and the Flavians and nephew of Philo.[27]

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[19] *O. Petr.* nos. 228, 229 at Myos Hormos; 231 at Berenice; 265(?) and 240(?).

[20] Reinach (1911b):28.

[21] *O. Petr.* nos. 275, 276; cf. *PIR*$^2$ II.773; J. F. Oates (1965):57-64 warns of the dangers of identifying Roman citizens and non-citizens based upon use or lack of the *tria nomina.*

[22] *O. Petr.* nos. 228, 291.

[23] *O. Petr.* nos. 244, 257.

[24] J. Schwartz (1960):30; Reinach (1911a):80 n. 2.

[25] Philo, *Embassy to Gaius* 314-315; Tacitus, *Ann.* 1.55; Dio Cassius 57.14.1; Suetonius, *Vitellius* 3.2 mention that Gaius Norbanus Flaccus was consul with Drusus in A.D. 15 and perhaps son of Augustus' colleague in 23 B.C. Could he be related in some way to Gaius Norbanus at Coptos?

[26] *O. Petr.* nos. 252, 266, 267, 271, 282.

[27] A. Fuks (1951):214ff; for Tiberius as Epistrategos of the Thebaid see *OGIS* 663=*SB* 8899; see M. Vandoni (1970):48-49; V. Burr (1955):25-33; as Procurator in Judaea see E. Turner (1954):59, 61; Burr (1955):25-33; as Prefect of the Roman army in Judaea Turner (1954):61ff and Burr (1955):67-82; as Prefect of Egypt Burr (1955):35-65; for more on Tiberius Julius Alexander see. J. D. Thomas (1982):52 and nn. 12-15; on relationship to Philo see Josephus, *AJ* 18.259; Philo conducted a Jewish embassy to Caligula in A.D. 39-40 for which see Philo, *Embassy to Gaius* and commentary in E. M. Smallwood (1961):242ff.

According to Josephus (*AJ* 19.277), Tiberius' brother Marcus married princess Berenice, daughter of King Herod Agrippa I of Judaea. Marcus seems to have died in 44 for in that year Berenice married again, this time to her uncle Herodes (*AJ* 19.354). Marcus is last mentioned in the *Petrie Ostraca* in A.D. 43/44. Thus, the coincidence of the general chronological information of Josephus with the chronology of the *Petrie Ostraca* seems to confirm the identity of the businessman Marcus Julius Alexander with Marcus, the brother of Tiberius Julius Alexander.[28]

Josephus mentions Alexander, father of Tiberius Julius Alexander, as *alabarch* in Alexandria.[29] The title *alabarch* may be identical with ethnarch in the Jewish community. However, Josephus refers to the office in connection with Alexandria and the term sometimes occurs in Egyptian papyri relating to financial matters. This has led most scholars to equate the *alabarch* mentioned in Josephus with the *arabarch* in charge of customs in the Eastern Desert.[30] Since Tiberius' family had Roman citizenship and a tradition of service to the Roman government, it seems likely that the office of *alabarch* which Alexander held was probably that of Roman customs officer.

The *Petrie Ostraca* indicate that Marcus Julius Alexander was active at Myos Hormos and Berenice from 37 to 43/44—i.e. the period during which his brother was Epistrategos of the Thebaid. Thus Marcus conducted his business at the same time and in a region adjacent to one that Tiberius governed. This connection in no way proves the family's use of a governmental post to facilitate Marcus' commercial transactions. On the other hand, it does suggest that government officials in Egypt, and undoubtedly elsewhere in the empire, could maintain their commercial interests while they served the state. We recall the freedman of Rufus, the Eparch of Berenice, who was also foreman-supervisor in one of the Eastern Desert mines, no doubt to the financial benefit of his patron. There seems to have been no concern on the part of the Roman state of a conflict of interest of an official serving the government.

Other Roman citizens who appear in the *Petrie Ostraca*, and may have owned firms, include Popilius Mamilius Andromachus,[31] Tiberius Claudius Castor,[32] Claudius Demetrius[33] and Tiberius Claudius Theodorus,[34] all at

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[28] Fuks (1951):214ff.

[29] *AJ* 18.159-160; 18.259; 19.276; 20.100.

[30] *AJ* 20.147 refers to another Jew as *alabarch*; for debate on the equation of *alabarch* and *arabarch* and his function see Turner (1954):54; Lesquier (1918):421-427; P. Jouguet (1931):21 and E. Courtney (1980):110-111.

[31] *O. Petr.* no. 271.

[32] *O. Petr.* no. 275.

[33] *O. Petr.* no. 275; cf. *PIR*² II.847.

[34] *O. Petr.* no. 276; cf. *PIR*² II.1041.

Myos Hormos. The ostracon mentioning Lucius Claudius Tr...anos[35] is fragmentary and the names of the ports where he traded are lost.

Amphorae plugs found during the Coptos excavations mention at least four other Roman citizens who engaged in the wine trade at Coptos: L. Titus Primus; Κλ. Λυκύραθος (?); Λ. Πίσωνος; Τιβερίος Κλαυδίος Cερῆν[ος?].[36] Perhaps some of the Roman citizens in Coptos, like Norbanus, participated in commerce between the Nile and the Red Sea ports. This should cause no surprise for there were Italians living in Alexandria by the second century B.C. and possibly some of these were merchants.[37] At present there is no evidence of vineyards in the Coptos region in the first and second centuries. The city seems to have been only a transshipment point for wines.[38] Excavations at Quseir al-Qadim unearthed large numbers of amphorae plugs,[39] and the *Petrie Ostraca* and the *Periplus* (49 & 56) mention export of wine to the Red Sea ports and India. Perhaps Nicanor and his family transported Norbanus' wine (and others') to the Red Sea ports for consumption there or for export to South Arabia and South India. Further excavations at Coptos and the Red Sea ports might supply additional prosopographic evidence concerning this trade.

Two inscriptions on the Coptos-Berenice road mention that C. Numidius Eros returned from a trip to India in 2 B.C. The nomenclature of the Latin inscriptions indicates Roman citizenship perhaps of a man of eastern Mediterranean origin who traded directly with India in the reign of Augustus.[40]

Women were involved in the Erythraean Sea commerce not only as agents, like Isidora of the *Petrie Ostraca*, but also as business persons in their own right. An inscription from a temple in Medamoud, Egypt sheds light on such businesswomen.[41] The inscription is a dedication to the deity Leto by Aelia

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[35] *O. Petr.* no. 296.

[36] Reinach (1911a):80 n. 2; for Ti. Cl. Serenus cf. *PIR*² II.1017, 1018—relatives or descendants of the man from Coptos?

[37] J. Hatzfeld (1919):143-144, 187.

[38] G. M. Parássoglou (1978):32, 44-47 notes that the Heptanomia, including the Arsinoite nome, was a good region for the cultivation of grapes, but little is known about estates or viticulture in the Thebaid in the Roman period.

[39] W. R. Johnson (1979a):233-236; J. H. Johnson (1982a):263.

[40] Meredith (1954b):281-287; A. Bernand (1977):161-162 for text, bibliography and commentary; I. Bieżuńska-Małowist (1977):173 lists only two attestations of a slave called Eros in the papyri; R. Cavenaile (1970):281 no. 1.601 calls him a soldier; see *PIR*² III.85 no. 86; Plutarch, *Apophthegm. Aug.*, 4 mentions an Eros as procurator of Egypt under Augustus, but his relationship, if any, with C. Numidius Eros is unknown. There was also a Publius Annius Eros (*CIL* X.2389) from Puteoli of early imperial date; Parássoglou (1978):24 n. 60 notes that Eros was a common servile name throughout the Roman period.

[41] Jouguet (1931):1-29 = *SB* 7539 = *SEG* VIII.703:

Λητοῖ θεᾷ μεγίστῃ
Αἰλία Ἰσιδώρα καὶ Αἰλί[α]
Ὀλυμπιὰς ματρῶναι
στολᾶται ναύκληροι κα[ὶ]

Isidora and Aelia Olympias who styled themselves *matronai stolatai*—terms indicating that they were women with more than three children who owned property and were free to pursue their own commercial ventures without a guardian. They were also *naukleroi* and *emporoi*, shipowners, or, more likely, financial backers, and merchants and made their dedication jointly with Apolinarios. The ability of these individuals to make a rich dedication in a temple and the indication in the commemorative inscription that the two women were engaged in some type of commercial activity suggest that they were quite wealthy. The *nomina* Aelia show that they acquired Roman citizenship under Hadrian, but this provides only a *terminus post quem* for the inscription. The *nomina* Aelia were common in the later second and third centuries too. It is the belief expressed by one scholar that this inscription is late second-early third century in date based upon letter forms.[42] However, given the apparent decline of the Erythraean Sea trade via Egypt at that time it is more likely that the inscription dates towards the middle of the second century.

Rostovtzeff suggests that the term *eparchos* in the inscription indicated that Apolinarios was prefect of the Roman squadron on the Red Sea[43]. This seems doubtful. We showed earlier that although some type of Roman military squadron patrolled Egypt's Red Sea coast, it was not large and the evidence does not confirm that its commander was styled *eparchos*. The position of Apolinarios' name and title in the inscription seems to indicate that he ranked behind the two women in the dedication, an unlikely event were he, in fact, commander of a Roman military fleet. Rostovtzeff restores the 22 centimeter lacuna in the inscription following the word *eparch* as[ῳ τῆς κλάσση]ς Ὀλυμπιάδος καὶ [Ἰσιδώρας]. The inscription would then read: Aelia Isidora and Aelia Olympias, *matronai stolatai*, Erythraean *naukleroi* and *emporoi* together with Apolinarios, *eparch* of the fleet of Olympias and Isidora, both set up this dedication to the greatest goddess Leto. This would make sense of the dative *eparchō* followed by the lacuna and then by the genitive Olympiados and a lacuna. If the restoration of these lacunae is correct, it appears that Apolinarios was captain or admiral of a "fleet" belonging to the two women in the inscription.[44] Con-

[ἔμπο]ροι ἐρυθραικαὶ ἅμ[α]
[. . . . . . .Ἀ]πολιναρίῳ
ἐπάρχ[ῳ. . . . .]ς Ὀλυμ-
πιάδος καὶ [
ἀμφοτέρων [
ἀνέθηκαν [

[42] On *matronai stolatai* see B. Holtheide (1980):127-134; on *naukleroi* and *emporoi* see Holtheide (1982):3-13; for the late second/early third century date of the inscription see Jouguet (1931):2, 10.

[43] *SEHRE*:131-132.

[44] H. J. Mason (1974):138 for *eparchos* as a naval term for *praefectus* (admiral); Seneca, *Ad Lucilium Epistulae Morales* 77.1 uses the term "classis" to refer to a civilian trading fleet—the Alexandrian grain fleet.

sequently both his rank and the "fleet" he commanded were civilian. However, A. Wilhelm restores the lacuna following *eparch* [ῳ ὑπὲρ τῆ]ς. This wording implies that *eparchos* was a kind of manager—Wilhelm cites a similar inscription from Medamoud inscribed ἔπαρχος καὶ οἰκονόμος as a possible analogy—for the affairs of the two women. In this case *eparchos* does not necessarily have anything to do with maritime activity, but does imply that the women's business affairs were such that they required a manager.[45]

*Naukleroi* and *emporoi* appear in other commercial inscriptions from Egypt which we will discuss below. The collective terms *naukleroi* and *emporoi* could indicate that companies or guilds of Erythraean *naukleroi* and *emporoi* existed. It is evident from the Medamoud inscription that *naukleroi*, taken with *emporoi*, could be financial backers of a business as well as captains or pilots of merchant ships. *Naukleroi* operating on the Nile, and between Alexandria and Rome, were under government control, but nothing suggests that Erythraean Sea *naukleroi* were under state supervision. Nothing is known of the existence of *collegia* involved in the Erythraean Sea trade in the Roman period.[46]

The *nomina* of the individuals in the *Petrie Ostraca*, the Medamoud inscription, and the Coptos amphorae plugs indicate that some acquired citizenship under Julius Caesar or Augustus, Claudius and Hadrian.[47] The fact that these citizens have Greek *cognomina* points to Greek or eastern Mediterranean origin. Since an Egyptian or Greek residing in Egypt usually, though not always, had to be a citizen of Alexandria in order to obtain Roman citizenship,[48] it seems likely that some of the Roman citizens mentioned in the ostraca were Alexandrians. If some of the wealthy Greeks and Egyptians named in the ostraca were Alexandrian, then it follows that Alexandrians, both Roman and non-Roman citizens, engaged in trade with the Red Sea ports.[49] Although it is impossible to

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[45] A. Wilhelm (1932):25-27:

Λητοῖ θεᾷ μεγίστῃ | Αἰλία Ἰσιδώρα καὶ Αἰλί[α] | Ὀλυμπιὰς
ματρῶναι | στολᾶται, ναύκληροι κα[ὶ || ἔμπο]ροι Ἐρυθραϊκαί,
ἅμ[α | σὺν Αἰλίῳ Ἀ]πολιναρίῳ | ἐπάρχ[ῳ ὑπὲρ τῆ]ς Ὀλυμ|-
πιάδος καὶ [Ἰσιδώρας] | ἀμφοτέρων [σωτηρίας] || ἀνέθηκαν
[ἐπ' ἀγαθῷ].

[46] Jouguet (1931):24-25 suggests that aristocrats living in the cities headed such *collegia*, but there is no evidence to support this hypothesis.

[47] Under Julius Caesar or Augustus: Gaius Julius Bacchylus in *O. Petr.* nos. 228, 291; under Claudius: Tiberius Claudius Castor of *O.Petr.* no. 275, Claudius Demetrius of *O.Petr.* no. 275, Tiberius Claudius Theodorus of *O. Petr.* no. 276, Tiberius Claudius Agathocles of *O. Petr.* nos. 275-276, Tiberius Claudius Serenus on Coptos amphorae plugs; under Hadrian or later Aelia Isidora, and Aelia Olympias of the Medamoud inscription.

[48] For Egypt in Roman civil law see Pliny, *Ep.* 10.6; 10.7; 10.10; Josephus, *Contra Apionem* 2.72; A. N. Sherwin-White (1973):246 cites a papyrus, *PSI* 1183, of A.D. 45 from Egypt which records a grant of Roman citizenship to a man and his sons who were apparently, contrary to the rule, not citizens of Alexandria.

[49] This trade seems to have continued on a reduced scale well into the third century, see *IGRR* I.1181 of *c.* 260 A.D.

detect any Roman citizen entrepreneurs from the West in the ostraca, the nomenclature on the inscribed amphorae plugs suggests that L. Titus Primus, L. Piso and Ti. Cl. Serenus were "westerners" who operated at Coptos.

In a number of instances slaves or freedmen evidently acted as agents for their masters or patrons. Kolumdas and Alexander acted on behalf of Tiberius Claudius Castor and Claudius Demetrius respectively at Myos Hormos.[50] Hermias was Marcus Julius Alexander's agent at an unnamed port[51] while Didymos and Hermes represented Tiberius Claudius Theodorus and Tiberius Claudius Agathocles at Myos Hormos.[52]

Imperial slaves and/or freedmen also appear in the *Petrie Ostraca*. A slave of the emperor Tiberius, 'Ανίκητος Κομμούνου Τιβερίου Καίσαρος Σεβαστοῦ[53] operated a business at Berenice over a two-and-one-half year period. This may be the same Anicetus mentioned by Tacitus (*Ann.* 14.3) as a freedman of Nero and tutor to Nero in his boyhood. Anicetus was commander of the fleet at Misenum by A.D. 59 and it was Anicetus who suggested that Nero kill his mother Agrippina by using a collapsible ship. When this failed Anicetus volunteered to lead a detachment of troops to murder the emperor's mother. This evidence of imperial business activities at Berenice over an extended period of time suggests that the emperor himself may have benefited from the lucrative Erythraean Sea trade with South Arabia and South India. An undetermined number of imperial slaves or freedmen appear on one ostracon: ... Θεο̣υ̣ καὶ 'Ηλίου Γαίου Καίσαρος Σεβ̣α̣σ̣τοῦ Γερμαν̣ι̣κ̣ο̣ῦ who conducted Caligula's business at Berenice in *c.* 37-41.[54] As in the case of Anicetus, this ostracon implies imperial involvement in the Erythraean Sea trade though the extent of this involvement is uncertain.

*Petrie Ostracon* no. 290 dated July 22, A.D. 62 is addressed to Miresis son of Nicanor from Tiberius Claudius Epaphroditus and Ammonios Chairemonos in Myos Hormos. The name Epaphroditus appears in an inscription of Ptolemaic date in Egypt and is common in the East during the first and second centuries.[55] A slave with this name appears in connection with an imperial estate of

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[50] *O. Petr.* no. 275.

[51] *O. Petr.* no. 252.

[52] *O. Petr.* no. 276.

[53] *O. Petr.* nos. 237, 238, 239, 247.

[54] *O. Petr.* no. 258. These names may be epithets of Caligula rather than names of his slaves or freedmen.

[55] For the Ptolemaic period see Bernand (1972b):55-67, no. 12; for the Roman period see Bernand (1977):59-62; 98-106; P. R. C. Weaver (1972):216 n. 7, 217; *IGRR* I.1256 = *SEG* XIII.601; *IGRR* I.1255 = *OGIS* 678 both of A.D. 118; *CIL* VI.1585b of A.D. 193; see *PW*, "Epaphroditus", *CIL* VI.1887; 8607; 8759; 10061 all of Neronian and Flavian date; for the name Epaphroditus in papyri see Bieżuńska-Małowist (1977):173; Tacitus, *Ann.* 15.55; Suetonius, *Nero* 49; Suetonius, *Domitian* 14 all refer to Nero's freedman; the name also appears on Roman "Pergamene" potters' stamps from the Roman east; for which see F. F. Jones (1950):283 no. 902. *O. Petr.* 290; Τιβέριος Κλαύδιος 'Επαφρόδειτος καὶ 'Αμμώ-

pre-Neronian and Neronian date in Egypt.[56] Elsewhere in Egypt an Epaphroditus appears at Mons Claudianus and Mons Porphyrites at the start of Hadrian's reign, and twice along the Coptos-Quseir road where he is styled an imperial freedman. The latter Epaphroditus may be the person bearing that name at Mons Claudianus and Mons Porphyrites. The two appearing on the Coptos-Quseir road may represent Nero's freedman.[57] Yet is difficult to establish a firm chronology for the two graffiti on the Coptos-Quseir road; neither bears a date and it is difficult to date either on paleographic grounds alone. Therefore, it is uncertain whether the four graffiti mentioning Epaphroditus in the Eastern Desert depict one and the same man or even if the dates attributed to the graffiti from the Coptos-Quseir road are correct, but the *praenomen* and *nomen* of the Epaphroditus on the *Petrie Ostracon* indicate manumission during the reign of the emperor Claudius.

The nomenclature and date of the ostracon are identical with the name and period of activity of Nero's freedman Tiberius Claudius Epaphroditus. The freedman was very close to Nero and held the important offices of *a cubiculo* (*CIL* VI.8759) and *a libellis*.[58] Although there is no evidence that Nero's freedman Epaphroditus visited Egypt, it was not unusual for the Julio-Claudian emperors to promote their slaves or freedmen to numerous and important duties in Italy and the provinces.[59]

That Epaphroditus' formal status does not appear on the ostracon is not surprising; imperial freedmen and slaves tended to omit their status in Egyptian documents.[60] However, as noted, omission of *libertus* and *servus* status was not invariably the case on the *Petrie Ostraca*. Epaphroditus and other imperial agents discussed here used Nicanor's transport service and it is well known that imperial use of civilian shippers and transporters was common throughout the

[2]νιος Χαιρήμονος Μιρῆσι Νεικάνορος χ(αίρειν). Παρελάβομεν [3]παρὰ σοῦ ἐπὶ Μυὸς ''Ορμου ἄρτω(ν) γόμους [4]οἴνου Λαδικηνὰ ἕξ / ς καὶ οἴνου [5]χορα. πωθ..ς δ̄ καὶ στίππου..ζγ. [6]Lη Νέρωνος τοῦ κυρίου Ἐπεὶφ κ̅η̅. [7](H. 2) Ἀμμώνιος παρέλαβον. [8](H. 3) Κλαύδ(ιος) Ἑρμί(ας) ἀπέχ(ω) τὰ τοῦ ἀργυρίο(υ) 3 τρία καὶ δʃ [9]ἀργυρω(μάτων) φίσκον ἕνα / ἀργ(υρίου) Λ̄ γ δʃ ἀργ(υρωμάτων) φίσκ(ος) ᾱ. [10]Lη Νέρωνος τοῦ κυρίου Ἐπεὶφ κ̅η̅. [11]Ἀπέχωι καὶ δέρματ(α) αἴγεια ὀκτῶι καὶ βοικὸν ἕνα [12]/ἀριθ(μῷ) θ̄ καὶ οὐδέν σοι ἐνκαλῶ [13]περὶ τοῦ γόμο(υ) τούτου.

2 Μιρῆσι Νεικάνορος inserted above the line. The meaning of l. 5 is obscure, as is also that of δʃ in lines 8 and 9.

[56] Parássoglou (1978):21, 52.

[57] Bernand (1972a):116-120; A. J. Reinach (1910b):35-36.

[58] Suetonius, *Nero* 49; L. A. Constans (1914):384; J. Michiels (1902):367.

[59] For examples see G. Boulvert (1970):52, 55, 63, 79, 108-109, 142, 158, 161, 174, 217-218, 394, 399, 414, 436; also for servile and freedman nomenclature see H. Chantraine (1967): 128-139; for the activities of Claudius' freedmen see Suetonius, *Claudius* 28, Tacitus, *Ann.* 12.53.2.

[60] Weaver (1972):10.

empire. Nicanor's dealings with the imperial agents and with the Roman army in the Eastern Desert[61] indicate that such was the case in Egypt as well.

At least one imperial freedman traded with the Red Sea port of Leukos Limen. A plaster amphora plug discovered in excavations of Quseir al-Qadim bears the legend ΚΕΡΕ. ΟΝΙΟΣ ΣΕΒ(αστοῦ) ΑΠΕΛΕΥΘ(ερος). Unfortunately, the name of his imperial patron is not preserved. The plug—dated first or second century, the period of the port's greatest prosperity—indicates that one of the imperial estates in Egypt or elsewhere in the empire was involved in the wine trade at Leukos Limen. A second plug from Quseir al-Qadim mentions a Titus Flavius ..allis, perhaps a freedman of one of the Flavian emperors (reigned A.D. 69-96)[62]. It seems that he too conducted business with the port.

The *Petrie Ostraca* and amphorae plugs from Quseir al-Qadim prove that imperial freedmen and slaves, and by association their imperial patrons, had commercial interests at the Red Sea ports of Myos Hormos, Leukos Limen and Berenice. This is not surprising considering that a number of imperial agents managed, sold or otherwise disposed of the produce of imperial estates in Egypt.[63] I suggest that some agents—imperial slaves and freedmen—mentioned in the ostraca and amphorae plugs were, in part, responsible for facilitating the sale of products of imperial estates and their transportation to the Red Sea ports. If this interpretation is correct, the ostraca and amphorae plugs corroborate papyrological evidence for the existence of estates owned by Tiberius, Caligula and Nero in Egypt and add to the slim amount of papyrological testimony dealing with imperial estates in Egypt in the Flavian period.[64]

Military units in the Eastern Desert also conducted business with Nicanor's firm. *Petr. Ostracon* no. 245 of *c.* A.D. 15-36 is a receipt from Apollinis Hydreuma near Berenice. In it the trooper Gaius Julius Longinus of the Cameresianian cohort of Niger[65] acknowledges receipt of goods brought by Castor son of Eponuchos. Castor appears repeatedly over a number of years in ostraca from Berenice.[66] He traversed the desert between the Nile and Berenice for the Nicanor family. Because it was an important station on the Coptos-Berenice road, Apollinis Hydreuma was a good stopping place. It would have been only natural to conduct business with troops posted at Apollinis Hydreuma or any other *hydreuma* along the desert roads connecting Coptos with the Red Sea ports, However, the extent of Nicanor's business dealings with these units is unknown.

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[61] *O. Petr.* nos. 245, 273.

[62] R. S. Bagnall, *et al.* (1979):243-244.

[63] Parássoglou (1978):50-64.

[64] Parássoglou (1978):16-19, 73 for estates of Tiberius; 19-20 for estates of Caligula; 22-23, 26, 45, 73 for estates of Nero; 27 for estates of Flavians.

[65] Cavenaile (1970):264 no. 1.192; possibly N. Criniti (1973):126, nos. 1157, 1194, 1195.

[66] *O. Petr.* nos. 239, 245, 280, 285(?); see Cavenaile (1970):281, no. 1.588 and *SB* 8580 of 2 Oct. A.D. 18 in the Wadi Hammamat: a soldier in the cohort of Niger is mentioned.

There are so many lacunae in the text of an ostracon mentioning Quintus Nemonius Heracles, a trooper possibly in a cavalry unit in the Eastern Desert, that the location of his post and the nature of his transaction with Nicanor's firm in December A.D. 46 are unknown.[67] As in the case of Castor's delivery to Apollinis Hydreuma, this transaction may have been a business deal of secondary importance concluded by one of Nicanor's agents travelling between the major centers of commercial activity, Coptos and the Red Sea ports.

The existence of a late third–early fourth century fort at Myos Hormos and evidence for activity at Clysma at that time suggest that these two ports, at least, were inhabited and functioned at that date. The archaeological evidence, while not substantiating the existence of Firmus and his commercial dealings with India as recorded in the *HA* (*Vita Firmi* 3.3-6), does corroborate the *HA*'s account of the existence of Erythraean Sea trade in the third century.

There are several references to Roman subjects residing overseas who were apparently involved in the Erythraean Sea trade. A census list of the Arsinoë tax district (A.D. 72/73) records those who had been awarded *epikrisis*, a privilege which exempted subjects from personal taxes.[68] Four of the one hundred and seventy-three individuals eligible for this privilege lived outside Egypt. One of these, a Hellenized Egyptian or a Greek, lived in India.

Other sources are less specific about the geographic origin of Roman subjects residing in South Arabia and South India. Ptolemy considered (7.2) Muziris an important Indian port in his day and sometime in the Roman period Muziris had a sufficient "Roman" population—probably mostly Egyptians, Egyptianized Greeks or Hellenized Egyptians—to boast a temple of Augustus.[69] The *Periplus* (30) mentions Indian, Arab and "Hellene" traders on Socotra (Dioscorida), an island in the Indian Ocean off the south coast of the Arabian peninsula.[70] However, the term "Hellenes" is vague and could refer to numerous people of eastern Mediterranean origin.

Tamil poets also recount Yavanas from the West engaging in commercial activity in India.[71] Yavana is a Prakrit-Sanskrit term for Greeks. The identif-

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[67] *O. Petr.* no. 273.

[68] ἐν τῇ Ἰνδικῇ Γαίων ὁ καὶ Δίοδωρος Ἡρακλείου τοῦ Διοδώρου, μη(τρὸς) Ἀμμωνίας... *P. Lond.* 2.260, l.42; also cited by H. Kortenbeutel (1931):65; Schwartz (1960):27; A. K. Bowman (1976):170; O. Montevecchi (1975):227-232; see also O. Stein (1929):35-36.

[69] Weber (1976) segment XI, 5 below and text 29; M. Reinaud (1863):108-109 believes that this temple was dedicated to Augustus, but provides no evidence; H. G. Rawlinson (1916):121; M. P. Charlesworth (1974):70; E. H. Warmington (1928):311; A. L. Basham (1968):232 believes that there was no temple of Augustus at Muziris, but that the name Augustus was a mistake for Agastya, a legendary sage who is thought to have brought Āryan culture to South India. Basham's argument is not persuasive; such a temple to "Augustus" outside Roman territory was not unique. For a discussion of the one at Vologesias on the Euphrates (*SEG* VII.135) see M. I. Rostovtzeff (1932c):799-800.

[70] G. W. B. Huntingford (1980):103; Basham (1968):230 believes that the name Socotra may derive from Sukhatara-dvipa, "the most sacred island".

[71] See P. Meile (1940):85-123.

ication of Yavanas with Greeks is etymologically and historically sound. The appearance of Yavanas in North Indian rock inscriptions refers to Hellenistic Greek kingdoms established in the region after Alexander. Yavanas cannot be equated with Persians or Parthians who were consistently called Pahlavas.[72]

The Yavanas had colonies in South India on the Malabar coast composed of merchants who reportedly acquired substantial wealth from the India trade.[73] The establishment of Yavana colonies may reveal one aspect of Western trade organization, but the silence of Roman and Tamil literature and lack of archaeological evidence preclude any study of it.

Classical authors, Tamil literature and archaeological evidence reveal relatively little about the geographic origin and organization of Roman subjects residing in the empire who engaged in the Erythraean Sea trade. Unfortunately, the evidence bearing on Nabataeans, Palmyrenes, South Arabs and South Indians engaging in this trade is similarly sketchy and comes mostly from Egyptian sites. The "nationality" or, rather, geographic origin of these groups is clearly defined by specific epigraphic references, but almost nothing is known of their organization or regulation by the Roman government.

There was Nabataean commercial activity in Italy at the ports of Puteoli and Ostia.[74] The Nabataeans had engaged in the lucrative overland caravan trade with South Arabia and Sinai for several centuries, and this traffic continued after the Roman occupation of Egypt and later of Nabataea itself. The stationing of military units at Hegra—a city whose main economic development and importance began in the reign of the Nabataean monarch Aretas IV (9 B.C.-A.D. 40)—in the mid to late first century[75] indicates Nabataean economic activity in this area. The Nabataeans recognized the importance of the overland routes and were determined to protect their interests.

Despite indications that Nabataean-South Arabian trade was extensive, only one inscription mentioning a Nabataean has been found in South Arabia. A Nabataean, Taim'obodat of the North Arabian tribe of Zuhmān,[76] resided in Arabia Felix in the first century B.C. or first century A.D. Though the Sabaean

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[72] The inscriptions published by D. C. Sircar (1965):175-180, no. 67 of A.D. 150 and 203-207, no. 86 of *c.* A.D. 149 do not alter this interpretation. For text, translation and commentary of inscription no. 67 see F. Kielhorn (1905):36-49. For more on the term Yavana see Narain (1957):165-169.

[73] PadiRRuppattu 2 Padigam, lines 7-10 *apud* P. Meile (1940):118; *Cilappadigāram* 5, 10 *apud* P. Meile (1940):113; on early colonies see M. G. Raschke (1978):645 and nn. 840-842, 673ff; for pre-Roman colonies see C. Chakrabarti (1970):52-58; for representations of foreigners in Indian art see M. K. Dhavalikar (1970):11-24.

[74] *CIS* II, 1. 158; C. Dubois (1907):100; Hatzfeld (1919): 183; E. Renan (1873): vol. 2, 380; *CIL* X.2644; 2935; Y. Meshorer (1975):61; *IG* 926, add. 842a.

[75] Meshorer (1975):41ff, 53-54; A. J. Jaussen, R. Savignac (1909):192-291; A. Negev (1977):571ff; A. Negev (1976b):203-236.

[76] *RES* 4153; J. H. Mordtmann (1932):429-430. Personal Nabataean names ending in compounds like Haritat (= Arethas), Malikus, Rabbel and Obodat—all Nabataean kings—

inscription mentioning Taim'obodat does not specify his occupation, perhaps he was a merchant (*negotiator*) in South Arabia. Given the trade between the two regions this is not unlikely.

Scores of graffiti and inscriptions indicate that the Nabataeans were also active in the Eastern Desert of Egypt in the Roman period and perhaps earlier. Few, however, reveal occupations or dates[77] and none can be securely dated on paleographic grounds alone. The earliest Nabataean inscription in Egypt dates 48-30 B.C. based on comparison of letter forms of a dated inscription at Petra.[78] On paleographic grounds most of the Nabataean inscriptions appear to have been written in the period after A.D. 110; the latest bears the date A.D. 266.[79]

In the list of eighty-four Nabataean inscriptions from Egypt (three are duplicated), mostly from east of the Nile, only four occupations are represented: cameleer, plasterer, priest and perhaps a patcher of clothes.[80] The presence of Nabataean cameleers' graffiti along the Eastern Desert roads suggests their involvement in transporting goods between the Nile and the quarries of the Eastern Desert and the Red Sea ports.

Perhaps entrepreneurs trading between the Nile and the Red Sea ports employed Nabataean cameleers because of their extensive desert caravan experience in the Sinai and Arabia. Most of the Nabataean graffiti in the Eastern Desert do not mention occupations, but from the fact that the graffiti occur along highways between the Nile and the Red Sea ports, we may infer that most were written by cameleers engaged in transport business. In any event, these graffiti shed no light on the existence of Nabataean guilds or firms.

The appearance of a priest, a plasterer and a clothes patcher in the Nabataean graffiti suggests that there were one or more settled communities in Egypt serving as a base for the Nabataean cameleers. Although there is no archaeological evidence, it seems that the Nabataeans, like the Palmyrenes, whom we will discuss below, probably resided in separate quarters of the major Nile emporia, Coptos, Antinoë and perhaps Dendereh, from which most of the business was generated. The main Nabataean task in Egypt's Erythraean Sea trade seems to have been to transport goods between the Nile and the Red Sea ports. There is no evidence at present that wealthy Nabataean entrepreneurs organized or

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are common and Taim'obodat's tribal affiliation and nomenclature identify him as Nabataean; for Taim as a Nabataean name see E. Littmann (1914):XIX; 45-46 no. 49; 56-58 nos. 69-70; 80; 83-84 no. 104.

[77] E. Littmann, D. Meredith (1953):1-28; E. Littmann, D. Meredith (1954):211-246; L. A. Tregenza, J. Walker (1949b):151-158; for the Ptolemaic period see Ch. Clermont-Ganneau (1919):1-29.

[78] Littmann, Meredith (1954):214, 227-230, no. 81; Clermont-Ganneau (1919):1-29.

[79] Littmann, Meredith (1953):26 for the date of most of the Nabataean inscriptions in Egypt and 16, no. 46a on the latest dated Nabataean inscription found in Egypt.

[80] Littmann, Meredith (1953):nos. 34, 37, 46a on cameleers; Littman, Meredith (1954):no. 75 for a plasterer; no. 81 for a priest; no. 61 for a patcher of clothes.

financed the Nile-Eastern Desert-Erythraean Sea trade. It seems that the Nabataean cameleers in Egypt worked for non-Nabataean employers.

The Palmyrenes in Egypt played a different role than the Nabataeans. The Palmyrenes, like the Nabataeans, were active caravaneers in their native land. Yet the dearth of Palmyrene inscriptions from the Eastern Desert on the one hand and evidence that there were wealthy Palmyrenes in the Nile valley on the other indicate that their commercial presence in Egypt was both more organized and better financed than the Nabataeans. While the Nabataeans only transported goods between the Nile, the Eastern Desert quarries and the Red Sea ports, the Palmyrenes seem to have organized well-financed trading companies.

Discoveries in Coptos and Dendereh furnish evidence for Palmyrene commercial activities in Egypt. Excavations at Coptos unearthed what appears to be a Palmyrene *funduq* or trade headquarters.[81] Frescoes decorated the walls and in the *funduq* itself archaeologists discovered two altars, twelve stelai (each representing a pair of Palmyrene merchants in the typically frontal static pose found in Palmyrene art), and an inscription. The undated inscription honors Zabdalas or his son. The term 'Ἁδριανοὶ Παλμυρηνοὶ in the inscription provides a *terminus post quem* of 130, the year Hadrian visited Palmyra and its citizens took his name in honor of the event.[82] *Terra sigillata* sherds found with the inscription date it to *c.* mid-second century,[83] but the chronology may be insecure. Neither the inscription nor the context in which it was discovered offers a secure *terminus ante quem.* The inscription simply states that Palmyrene *naukleroi* and *emporoi* operating in the Erythraean Sea dedicated a propylon and three stoai.

There is no indication where the edifices mentioned in the inscription were erected. However, as the inscription was found at Coptos, where extensive building activity occurred in the first, second and early third centuries, we can surmise that Coptos received these Palmyrene dedications. The richness of the dedications reveals that the Palmyrene merchants and *naukleroi* living in Coptos considered the town their permanent residence and that the Palmyrene community in Coptos was relatively well-to-do. Perhaps Zabdalas himself was the head (ἀρχέμπορος) of the Palmyrene commercial community in Coptos. Zabdalas may have been related to a caravan leader mentioned in an inscription from Palmyra of A.D. 154/155 (*OGIS* 633) where the position was a very prestigious one. The joint dedication by *naukleroi* and *emporoi* suggests that these formed some type of Palmyrene trading association in Egypt. Though

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[81] Reinach (1911a):64; for a brief discussion of the Palmyrenes in Egypt at this time see J.-P. Rey-Coquais (1978):55.

[82] The inscription = *AE* 1912, 55 no. 171; see Reinach (1911a):61-65.

[83] Reinach (1911a):65.

little is known of Palmyrene commercial firms in Egypt, trade companies were common in Palmyra.[84]

A bilingual Greek-Palmyrene inscription from Dendereh, commonly dated between 160 and 212, mentions Palmyrene *naukleroi* and merchants.[85] This may indicate the presence of Palmyrene trade companies or guilds in Egypt. However, there is no evidence for Palmyrene caravaneers in Egypt in the Roman period.[86] The inscription seems to be a dedication to Julius (?) Aurelius Z... (?) a Palmyrene at Dendereh.[87] Presumably the dedicants were Palmyrene merchants honoring an important member of their community.

A single inscription of Ptolemaic date attests Palmyrene-Nabataean commercial relations in Egypt.[88] The fragmentary inscription, recording a lease between the son of Yarḥibōlā, a Palmyrene, and the Nabataean priest mentioned above, establishes that both Palmyrenes and Nabataeans resided in Egypt prior to the Roman annexation. However, the dearth of Palmyrene and Nabataean inscriptions of Ptolemaic date suggests that their numbers were small, increasing only when Roman trade with South Arabia and South India via Egypt expanded.

There were other Palmyrenes living in Egypt. An inscription indicates that Palmyrene archers were stationed at Coptos under Caracalla (reigned 211-217) to protect Eastern Desert trade.[89] The Palmyrene occupation of Egypt under Zenobia brought in more Palmyrenes though there is no mention of Palmyrene merchants at that time.[90] This fact should not surprise us for the occupation was short lived and probably not very extensive.

South Arabians participated in the Erythraean Sea trade, but it is uncertain in what numbers and with what frequency they visited Mediterranean markets. A Qatabanian market decree, a Minaean market code, Strabo, Pliny and the *Periplus* suggest that South Arabian traders or at least trade in South Arabia were closely regulated by the states there.

The *Periplus* applies the term *apodedeigmenos hormos* to Myos Hormos (*PME* 1), Berenice (*PME* 1) and Moscha Limen in the Hadhramaut (*PME* 32). The phrase seems to prescribe ports from which certain cargoes destined for the Erythraean Sea trade could be shipped and to which certain imports were

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[84] *OGIS* 632, 633, 638, 646; on Zabdalas see Rostovtzeff (1932c):793-811; E. Will (1957): 262-277.

[85] Schwartz (1960):32; Ch. Clermont-Ganneau (1903):300-306 = W. M. F. Petrie (1900): 33, pl. XXV.

[86] Clermont-Ganneau (1903):300-306.

[87] Clermont-Ganneau (1903):300-306.

[88] Clermont-Ganneau (1919):1-29; Littmann, Meredith (1954):227ff.

[89] *IGRR* I.1169 = *OGIS* 639.

[90] Schwartz (1953):63-81; Littmann, Meredith (1954):227ff, 237; Clermont-Ganneau (1919):1-29.

confined.[91] The discovery of an import-export trade between South India, South Arabia and Egypt at Leukos Limen proves, however, that the Erythraean Sea trade was not confined to these three ports. Alternatively, Leukos Limen may not have been in existence when the *Periplus* was composed.

Unfortunately, evidence from Leukos Limen does not indicate whether certain Erythraean Sea trade items were restricted. Perhaps the *Periplus* is careless in listing which ports were *apodedeigmenoi hormoi*. Whatever the specific legal definitions of these different terms for ports engaging in the Erythraean Sea commerce, it is clear that some type of regulation, imposed by the governing powers controlling each port, was in effect over the traders and their wares at those ports.

The mercantile code of the South Arabian kingdom of Qataban reveals that trade was tightly controlled by the king of Qataban.[92] The decree heavily favors Qatabanian merchants over foreigners trading in Qatabanian territory. The decree lists a number of restrictive regulations concerning commerce, but there is no specific mention of trade with India or the Roman world. Maybe this latter category was covered by a section dealing with foreign, i.e. non-Arab, traders. Alternatively, a separate Qatabanian code of regulations may have existed to cope with Erythraean Sea commerce. A Minaean market code also reflects that South Arabian kingdom's regulation of trade.[93]

Some of the South Arabian states may have even gone so far as to found colonies in other parts of the Arabian peninsula to promote their commercial exploitation of the incense and aromatic trade.[94] Strabo, Pliny and the *Periplus* reinforce the belief that there was strict government control of traders in the South Arabian kingdoms. Strabo (16.4.19) says that the Sabaean king was the authority in law suits and everything else. Strabo does not mention the powers of other South Arabian rulers other than to say that (16.4.3) monarchy was the prevalent form of government.

Pliny says (*NH* 12.30.54) that 3000 families in the Minaean kingdom controlled the right to trade in frankincense. The *Periplus* (29) indicates that the king's slaves harvested frankincense in one unspecified region of South Arabian. This suggests that some groves were royal property and that the cultivation and sale of frankincense was a source of income to the crown. This, together with the fact that merchants at Moscha Limen in the Hadhramaut had to trade with the king's officers and the frankincense commerce there was strictly regulated (*PME* 32), suggests that frankincense was a royal monopoly in some South Arabian states.

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[91] J. A. B. Palmer (1951):157-158.

[92] A. F. L. Beeston (1959):3, 4, 7, 11-16.

[93] A. F. L. Beeston (1978):142-145.

[94] R. L. Cleveland (1960):14-26; J. Pirenne (1975):81-96; A. F. L. Beeston (1976a):39-42 D. B. Doe (1979):40-44.

There is other evidence of close supervision of commerce in South Arabia. Pliny says (*NH* 12.30.54) that transit through and export trade from Minaean territory was along one narrow road. There is archaeological evidence from the Wadi Beihan region near Timna', the ancient capital of Qataban, which suggests that such roads existed in other South Arabian kingdoms and may have functioned partially for customs purposes. The Wadi Beihan roads are very narrow, paved thoroughfares with walls on both sides. The Qatabanian government may have wanted to confine traffic to these narrow roadways so that it could more easily control and tax the flow of goods through its territory. However, it is unlikely that such road building procedures would have been entirely successful for purposes of trade regulation.[95]

Ruins of unknown date discovered, but as yet unexcavated, at Kone, west of Birali in South Arabia may also indicate something of the government regulation of commerce. The ruins of Kone seem to be those of a carefully planned town. On the west side of the town is a long rectangular building with small rooms on the northeast and northwest corners. The large building is reminiscent of the customs house and storage facilities which M. Hackin discovered at Begram, Afghanistan.[96] Perhaps the edifice at Kone served in a similar capacity. Here representatives of some South Arabian monarch may have stored goods destined for import or export and levied customs duties.

While substantial literary and archaeological evidence exists for the regulation of commerce in South Arabia itself, we know almost nothing of the regulation and organization of South Arabian merchants inside the Roman empire. Several Minaean inscriptions and graffiti have been found in northern Saudi Arabia, Egypt and the Mediterranean. Some are Hellenistic/Ptolemaic or Roman in date. Others cannot be dated at all. Yet several of these texts have commercial implications.

A bilingual Minaean-Greek inscription from Delos mentions two Minaeans, H. Hāni' (?) and Zayd'il of the Kh-dh-b (... ?) tribe who erected an altar to Wadd and the deities of Ma'īn at Delos. The letter forms of the Greek portion of the bilingual date the inscription to the second half of the second century B.C., when Delos became an important commercial center following the destruction of Corinth in 146 B.C.[97] Though the inscription does not reveal the occupations of the Minaeans on Delos, perhaps they were merchants.

A Zayd'il also appears in a Minaean inscription on a wooden sarcophagus from Egypt, perhaps from the Fayum. This inscription refers to the twenty-second year of king Ptolemy, but it is uncertain which Ptolemy is meant. The Zayd'il of the wooden sarcophagus was an importer of myrrh and calamus and

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[95] For Qatabanian roads see D. B. Doe (1971):215 and plates 112-113.

[96] G. Mathew (1970):31; for more on Begram see R. E. M. Wheeler (1954):162ff.

[97] *RES* 3570; Ch. Clermont-Ganneau (1908):548-549, 556.

may have been employed by Egyptian sanctuaries to supply the aromatics used in religious rituals.[98] It seems unlikely that the Zayd'il from Delos and the one mentioned on the sarcophagus from Egypt were one and the same as they were from different tribes. The Delos Zayd'il was from the Kh-dh-b(. . . ?) tribe while the Egyptian Zayd'il was from the tribe of Ẓayrān.[99]

A Greek inscription discovered reused as a building stone in a later edifice at Coptos mentions either a "Hellenized" South Arab or perhaps a Greek. The six line inscription dated 9 August A.D. 70 is a dedication by Hermeros son of Athenion, a resident of Aden on the Red Sea (or trader of the Red Sea). Hermeros' dedication is to the deities Isis and Hera. Such a dedication in Greek suggests that Hermeros was a permanent or at least long time resident of Coptos. His association with the Erythraean Sea commerce is stipulated in the inscription and may receive additional confirmation from one of the *Petrie Ostraca*. One Hermeros appears on an ostracon of *Petrie* dated A.D. 57 where he is mentioned as delivering jars of wine to Berenice.[100] The duplication of the name on the inscription and ostracon and the affiliation of both individuals with the Coptos-Red Sea trade suggests that we are dealing with one and the same man.

Three Minaean graffiti have been discovered in the Eastern Desert of Egypt in the Wadi Hammamat, a route which connected Coptos with the Red Sea port of Leukos Limen. One appears at Bīr Mānih̩ and two others at Qaṣr al Banat on a rock outcrop near one of the *hydreumata* that guarded the road.[101] All three are very short and each mentions only a personal name, sometimes a patronymic and tribal affiliation. Though the graffiti do not reveal their occupation it would appear, given the find spots, that these men were somehow involved in the Erythraean Sea commerce between South Arabia and Egypt. Two other Minaean inscriptions from the Arabian peninsula refer specifically to trade with Egypt.[102]

A number of Minaean inscriptions have been found in northern Saudi Arabia. Five undated Minaean inscriptions have been found at Hegra mentioning pilgrims, priests, a temple, a raid and a war. These shed no light on commercial activity in the area which is odd considering that caravans between north Arabia and Arabia Felix regularly passed this region which contained a Minaean trade colony at Dedan/Al'Ula.[103] Archaeologists found another Minaean inscription in the vicinity of Al-Jawf in northern Saudi Arabia.[104]

[98] *RES* 3427; Clermont-Ganneau (1908):557-558; A. F. L. Beeston (1937):60-62.
[99] Clermont-Ganneau (1908):558; Beeston (1937):59-78.
[100] *O. Petr.* no. 287; G. Wagner (1976):227-281.
[101] *RES* 3571; G. Ryckmans (1949):56-57 nos. 360-361.
[102] *RES* 2771; 3022.
[103] Jaussen and Savignac (1909):250-262; Beeston (1978):142-145.
[104] F. V. Winnett, W. L. Reed, *et. al.* (1970):19.

Al-Jawf is at the southern end of the Wadi Sirhan which led northwest to debouch just to the east of the Decapolis. The Wadi Sirhan conceivably could have been used by merchants coming from Gerrha on the Persian Gulf and, possibly, the Minaean inscription from Al-Jawf somehow relates to this commerce. However, there is little or no extant evidence that the Wadi Sirhan was a regular commercial caravan route.

Archaeological evidence in the form of pottery and graffiti and dipinti on ostraca discovered at Quseir al-Qadim suggests trade between that port and the South Arabian kingdoms of Saba and Himyar. This testimony taken by itself does not necessarily reveal visits of Himyarite and Sabaean merchants to Egypt, their residence there or their organization. However, when we also take into account the presence of Minaean graffiti on the road between Coptos and Quseir which prove that South Arabs used this route, then we must conclude that some South Arabs visited, perhaps even dwelt in, Quseir as well.

Although Roman subjects traded with and resided in South India, evidence for South Indians in the Roman world is insignificant. Tamil literature is silent on South Indian commercial ventures to the West. The *Kauṭīliya Arthaśāstra* (2.16.18-19) indicates only that Indians traded abroad, but does not specify where. Furthermore, most Indian scholars believe that the *Kauṭīliya Arthaśāstra* is a compilation by several authors representative more of some of the north Indian kingdoms than of the south; the document may be more wishful thinking than a reflection of the political situation in South India in the early Christian centuries. It must be used with caution. Western evidence sheds some light on Indian involvement in this commerce. Found at Quseir al-Qadim among the sherds with graffiti in Tamil is one that mentions a Tamil family name associated with mercantile activities during the second century. Though not proof in themselves, such graffiti have led excavators to speculate that Tamil merchants resided at Quseir al-Qadim in the Roman period.[105]

The South Indians appear to have had some type of trade guild organization and tightly regulated trade at home. The *Kauṭīliya Arthaśāstra*'s admonitions dealing with foreign trade and traders may not reflect existing government regulations, but merely the precepts of its author(s).[106] The *Kauṭīliya Arthaśāstra* also discusses a government official in charge of river routes for trade and trade regulations.[107] The Tamil occupation of Ceylon in the Roman period, discussed above, and dearth of evidence for direct Roman trade with the island may indicate some Tamil government's regulation of Erythraean Sea commerce with the place. In fact, the *Periplus* (59) together with numismatic evidence and the views of some modern scholars suggest that most, if not all, Yavana trade with Ceylon was indirect via the Tamil emporia of South India until the

105 D. S. Whitcomb (1979b):18; J. H. Johnson (1982a):263-264.
106 *Kauṭīliya Arthaśāstra* 2.16.4; 2.16.11; 2.16.13; 2.16.18-19.
107 2.6.1; 2.16.25.

fourth century.[108] It was, it seems, in the fourth century that Tamil hegemony over the island ceased and extensive numismatic evidence for Roman trade with the place first appears.[109] However, we must remember that Pliny's story (*NH* 6.24.84-85) of the freedman Lysas blown off course to Ceylon and the subsequent Ceylonese embassy to Rome suggests some freedom of action by the Ceylonese themselves in trade matters in the first century.

The careful protection and piloting of foreign ships by the rulers of Barygaza on the west coast of India in the first century (*PME* 43-44) and their restrictions on which ports foreign ships could enter and unload cargo (*PME* 52) also reveal regulation of foreign commerce. Passages in the Tamil poets mention customs officers of the Cōḻa king and warehouses for the storage of foreign merchandise owned by the Cēra monarch.[110] The existence of colonies of foreign merchants in South India may suggest that the Tamil states regulated where foreigners could live and trade inside their territory. Unfortunately, there is no evidence for Indian guild activity or regulation inside the Roman empire. The one exception is the family mentioned in the sherd from Quseir al-Qadim which may indicate that an agent or member of that family resided at Leukos Limen for commercial purposes.

Dio Chrysostom (32.40) indicates that Indian merchants resided at Alexandria.[111] At some unknown date a man named Sophon left a graffito at the Pan temple at El-Kanais on the Edfu-Berenice road asking for a safe journey. Some scholars believe that Sophon was a Hellenized Indian merchant engaged in trade with Egypt in the late Ptolemaic or early Roman period.[112] However, Sophon is identified as ἰνδός. This could, indeed, indicate that he was an Indian, but it is equally possible that ἰνδός reflects his occupation, not his nationality. In classical Greek authors the term ἰνδός often refers to a mahout, an elephant driver or keeper. Since the Ptolemies are known to have acquired elephants for war from areas south of Egypt and to have transported them to Egyptian Red Sea ports for transfer to the Nile via the Edfu-Berenice road especially in the third and second centuries B.C., it would not be surprising to find some evidence of their presence along the Eastern Desert roads; Sophon may have been an elephant driver who helped transfer the captured beasts from the Red Sea ports to the Nile.[113] A putative Jain or Buddhist temple at

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108 M. Cary, E. H. Warmington, (1963):100; B. J. Perera (1952):301.

109 See chapter 2.

110 For these Tamil authors see C. Maloney (1975):16-17; for other comments on South Indian guilds see Basham (1968):206-207, 219-220; W. Schmitthenner (1979):100.

111 For the date of this discourse see C. P. Jones (1973):302-309.

112 Bernand (1972b):99-100, no. 38; Basham (1968):230-231 believes that Sophon was an Hellenized form of Sanskrit for Subhānu; see also H. Hultzsch (1904):402.

113 Bernand (1972b):99-100, no. 38; 33, 44-46, no. 9*bis* for another reference to elephants and 33, no. 46 for another ἰνδός; possibly 38-39, no. 8 refers to an elephant hunt; see plate 54, nos. 1-2 for drawings of elephants found at the Pan temple.

Petra[114] may indicate the presence of Indians there, but it is impossible to positively attribute or date this edifice.

*Taxation, Tolls and Tariffs*

The Romans had two types of taxes: tribute (direct tax) and *vectigalia* (indirect tax). The *vectigalia* were of four kinds: *portorium* (customs and tolls), *vicesima hereditarium* (inheritance tax), *vicesima libertatis* (tax on manumission of slaves) and *centesima* or *ducentesima rerum venalium* (tax on sales at public auctions). We are concerned here only with the *portorium* levied on merchandise entering the Roman empire.

There were at least thirteen or fourteen major customs zones—several provinces might comprise a single customs district—in the Roman empire: Britain, Germany (?), Illyricum, the Gauls, Spain, the provinces of Africa, Egypt, Asia, Bithynia-Pontus-Paphlagonia, Greece (Achaea, Thrace, Macedonia?), Syria, Judaea, Sicily and Italy. Strabo (17.1.41) says that several customs zones existed within the province of Egypt.[115]

Whether the Eastern Desert of Egypt, which included the Red Sea ports engaging in the lucrative South Arabian-South Indian-Ceylon trade, was a separate customs district is uncertain. During the first century of the Roman occupation of Egypt the Eastern Desert was a military zone under the command of the *PMB*. An inscription from the Eastern Desert indicates that the *PMB* took orders directly from the Prefect of Egypt. The Coptos Tariff, discussed above, reveals that the *arabarch*, who reported to the *PMB*, dealt with the fiscal affairs of the region.[116]

The *PMB* seems to have exercised both civil and military control in his region, much as a Ptolemaic epistrategos. Perhaps the prefect's *officium* was the Roman equivalent of the Ptolemaic post of ἐπὶ τῆς Ἐρυθρᾶς καὶ Ἰνδικῆς θαλάσσης, which seems to have evolved when Ptolemaic trade with the East, especially India, developed.[117]

*Papyrus Hamburg* 7 tells us that in A.D. 132 the Red Sea coast was administered by civilian officials. At that time the *arabarch* took orders from the Epistrategos of the Thebaid. The Epistrategos could also hold the office of *arabarch*, for one Claudius Geminus is known to have served simultaneously as *arabarch*

[114] H. Goetz (1974):245-248.

[115] *Portoria* were also levied at the border between two provinces or groups of provinces; R. L. V. Cagnat (1882): v, vi, 19; S. J. de Laet (1949):125ff, 170ff, 247ff, 273ff, 283ff, 297ff, 312ff. 331ff,

[116] Eight or nine *Praefecti montis Berenicidis* are recorded by Cavenaile (1970):220, no. 132; 227, no. 299; 236, no. 528; 239, no. 601 (?); 269, nos. 1295 and 1307; 286, no. 1715; 296, no. 1962; 301, no. 2068; D. Meredith (1954b):284-285.

[117] J. D. Thomas (1975):71-72, 121-122.

and Epistrategos of the Thebaid.[118] At some point, therefore, the Red Sea district, formerly governed by the *PMB*, came under the civilian control of the Epistrategos of the Thebaid.[119]

Other evidence indicates that the Red Sea coast was not a separate customs district, but was joined with Syene (Aswan), the customs post at Egypt's southern border. An inscription of uncertain date mentions Apollonios, son of *arabarch* Ptolemaios, strategos of the Ombeitos region around Elephantine and Philae and *paralemptes* of the Erythraean Sea...[120] Apollonios controlled the areas around Syene and was collector of duties of the Erythraean Sea. This suggests that the *PMB* lacked exclusive control over the tax collection in his region. Some unanswerable questions remain. The relationship between the *arabarch* and the *paralemptes* is unclear. Though the *arabarch* was a Roman official, the *paralemptes* may not have been. He was possibly a Ptolemaic administrator.[121] If both were Roman officials, it is unclear where the two stood in the chain of command between the agents collecting the taxes and the procurators of the fiscus.

There is some evidence that lower level administrators collected tolls. Pliny's account (*NH* 6.24.84) of the freedman of Annius Plocamus who farmed the right to collect the *vectigal* of the Red Sea from the fiscus raises several points. The Annii were prominent in the commercial and political life of Puteoli and Pompeii from at least *c.* 70 B.C. on.[122] Since Puteoli was Italy's major port in the early empire, it would not be surprising to find some of its citizens, perhaps including Annius Plocamus, engaged in trade or tax farming elsewhere in the Roman world. It seems that Annius Plocamus farmed the right to gather the *vectigal* of the Red Sea from the fiscus and appointed his freedman Lysas as collector.[123] A passage in Statius (*Silvae* 3.3.92) seems to reveal that

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[118] For Claudius Geminus see *OGIS* 685 = *CIG* 4751 = *PIR*² II. 879 which dates this man to the late first century. He may be related to a Claudius Geminus known to have been idios logos in about A.D. 91. For further discussion see J. D. Thomas (1982):53, 185, 193.

[119] Thomas (1982):159 and Thomas (1975):10, 26 notes that the Ptolemaic epistrategos had both civilian and military powers while the Roman epistrategos had only civilian powers.

[120] ['Απολ]λώνιος, Πτολεμαίου | [ἀραβάρ]χου υἱός, στρατηγὸς τοῦ |
['Ομβ[είτου καὶ τοῦ περὶ 'Ελεφαν|[τίνην] καὶ Φίλας καὶ παρα-
λήμπτης || [τῆς 'Ερ]υθρᾶς θαλάσσης, ἦλθον | [καὶ προσεκ]ύνησα
τὸν μέγιστον 'Ερμῆν | [σὺν 'Αθ]ηναίωι τῷ ἐμῷ ἑταίρῳ.

*OGIS* 202 = *CIG* III. 5075 = *P. Taur.*, 71ff.

[121] For the controversy on the dates see *P. Bodl.* 60:196-197; O. Hirschfeld (1905):82 n. 4. It could be late Ptolemaic or early Augustan.

[122] Anni Plocami, qui Maris Rubri vectigal a fisco remederat, libertus...
D'Arms (1981): 166 and n. 79 discusses the Annii; see also J. H. D'Arms (1974):107-109; F. Sbordone (1976): 145-147; Raschke (1978):644, 850 n. 819; J. Schwartz (1956):119ff. discusses an ostracon of the first half of the second century from the Eastern Desert site of Fawakhir in which a soldier with the name Annius appears.

[123] D. Meredith (1953a):39-40; see also A. Bernand (1977):162-164 for texts, bibliography and commentary.

pearl fisheries in the Erythraean Sea were a source of tax revenues for the Romans. Though there is evidence for a royal pearl monopoly in ancient India, there is none for such a monopoly under the Ptolemies or Romans. However, it is possible that Annius Plocamus was involved in the collection of *portorium* levied on—among other items—pearls imported to the Roman Empire from fisheries in the Erythraean Sea. While sailing around Arabia, presumably in connection with his duties, a storm blew the freedman Lysas off course to Ceylon.[124] Whether the fiscus was the *fiscus Alexandrinus* or the imperial fiscus is unclear, but in either case the ultimate beneficiary was the emperor himself.[125]

Were the tax farmers or their agents stationed at each of the Red Sea ports to collect duties on imported goods? Second century ostraca from Syene indicate that tolls were assessed and collected at Syene itself.[126] From this we might infer that agents collected the Red Sea *vectigalia* at the Red Sea ports; a suggestion supported by an unpublished papyrus (*P. Vindob. G. 40822*) of *c*. A.D. 150 in Vienna's Österreichischen Nationalbibliothek. Nothing is known, however, of duties levied on merchandise exported from the empire. If there were export duties, it is likely that they would have been collected at the point where the goods originated within the empire, especially in the case of Egypt. They would have been indistinguishable from *portoria* levied on other goods traded within the empire itself. Alternatively, since the Red Sea ports sent their imported goods to the Nile for transshipment to Alexandria, the duties may have been assessed and collected in the Nile valley emporia, at Coptos and later on at Antinoē and perhaps Dendereh. In either case, the goods were subject to duties as they passed through tax zones within Egypt and again when leaving Egypt for other destinations in the Mediterranean.[127] Thus the "double duty" collection in Egypt further augmented the government's income.

There is no indication whether the *portoria* levied in Egypt on goods imported from South Arabia and South India were assessed *ad valorem* or whether they varied from one period to another. A second or third century

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[124] F. Millar (1963):40.

[125] For further discussion of the fiscus see Millar (1963):40 and nn. 167-168; P. A. Brunt (1966):75-91; F. Millar (1977):188-190, 197-200; the *Fiscus Alexandrinus* is mentioned in *AE* I, 47 no. 130 = *ILS*, 1954 ed., 330 no. I.1518.

[126] *CIG* 4867; 4868; 4874; 4876; 4877; 4878; 4882; 4884; 4884b; 4885.

[127] I wish to thank P. J. Sijpesteijn for bringing *P. Vindob. G 40822* to my attention. I have not seen the text, but Prof. Sijpesteijn and a colleague are preparing it for publication; for more on tolls see Fiesel (1925):59ff; *CAH* X (1934):303, 307; L. C. West (1917):49; for tax zones inside Egypt such as the Heptanomid, Thebaid, Oxyrhynchid see Strabo 17.1.41; for customs levied on goods leaving Egypt for other Mediterranean ports see Strabo 17.1.13; for customs posts at the mouth of the Nile see Julius Caesar, *Bell. Alex.*, 13; for tolls in Egypt in general see de Laet (1949):302ff.

customs tariff (*P. Bodl. 60*) lists a number of wares imported from other regions of the Erythraean Sea including Minaean and Trogodytic myrrh, South Arabian aloe and cassia and the amount of duty paid by weight.[128] However, the papyrus has so many lacunae that the unit of weight and the amount taxed in each case are not extant. Therefore we cannot determine what percentage of the value of a particular product was levied as duty.

The ostraca from Syene may attest the amount levied on goods imported from Nubia/Ethiopia, but these indicate neither the type nor quantity of goods taxed. We have already noted that the Coptos Tariff sheds no light on the question of duties levied on imported goods. The usual attested duty in the Roman empire on imports was 5% or less and *portoria* usually were levied at 2-2½% *ad valorem*.[129] However, higher rates are sporadically attested at Leuke Kome, the borders of Syria and in Egypt.

The usual Roman *ad valorem* customs rates of 2-2½% levied in many areas of the empire may not invariably apply to Roman Egypt. Egypt was a province with a special status and as such may not have been subject to *portoria* rates levied elsewhere in the empire. The Ptolemaic period realized import duties at the rate of 20, 25, 33⅓ and 50% on goods received at Pelusium for transfer to Alexandria,[130] and there is evidence that the Romans retained such high duties in Egypt. The unpublished papyrus in Vienna mentioned earlier refers to the *tetarte* (25%) tax in the Roman period in Egypt.[131] The papyrus deals with customs taxes levied at Alexandria and at the Red Sea ports on merchandise arriving from the Indian port of Muziris. As research now stands it is unclear if a 25% tax levied on items imported from South Arabia and South India was common in the Roman period in Egypt. Nevertheless, tolls charged on merchandise from South Arabia, South India and Ceylon must have resulted in considerable income for the Roman government. Strabo says (17.1.13) that Egypt provided Auletes, father of Cleopatra, with an annual income of 12,500 talents and that careful Roman management, and the expansion of trade with India, increased this amount considerably. Unfortunately, Strabo gives no figures for revenues from Egypt in the Roman period.

There was also a tax on ships *(enhormion)* using Egyptian ports.[132] Although there is no evidence, perhaps a similar tax was levied on ships using the Red Sea harbors of Egypt, which would have provided additional revenues for the government.

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[128] *P. Bodl. 60*:186-187.

[129] S. L. Wallace (1938):256; Cagnat (1882):46, 69-70; H. Dessau (1884):494; however, Fiesel (1925):79 notes that there were some compound tolls within Egypt which reached 6%.

[130] Wallace (1938):256; *P. Cairo Zenon* 59012 of May-June 259 B.C.; see also A. Andreades (1932):11; H. Seyrig (1941c):265 and n. 3.

[131] See note 127.

[132] *P. Fay.* 104; *WO.* II.263; 274; 277; 302-304; *O. Strass.* 274; *O. Br. Berl.* 4.32.

Information on customs districts, collectors and amounts levied is even less abundant for the kingdom of Nabataea and the later Provincia Arabia. The kingdom of Nabataea undoubtedly had an elaborate customs apparatus. However, except for a famous passage in the *Periplus* (19), nothing specific is known either about customs districts in Nabataea or of the tolls collected at its borders. The only reference to toll collection in Provincia Arabia is a citation in Pliny. He says (*NH* 12.32.65) that all along the route from South Arabia each tribe or village levied tolls on passing caravans. Roman toll collectors at the empire's borders also collected duties. All these fees greatly increased the cost of transporting goods by caravan from South Arabia to the Mediterranean. By the time a camel load reached the eastern Mediterranean ports its average cost was 688 denarii.[133] Unfortunately, Pliny says nothing of the amounts charged nor of the location of the customs posts.

The *Periplus Maris Erythraei*, a navigational guide fraught with intractable chronological and interpretive problems (see appendix B), offers some clues concerning customs districts in Nabataea/Provincia Arabia and the tax levied at the port of Leuke Kome. In chapter 19 the *Periplus* states that two or three days sail from Myos Hormos eastwards across from Berenice there is another port with a fort called Leuke Kome. Leuke Kome, in the possession of the Nabataean king Malichas, is connected by road to Petra. Leuke Kome has a harbor for small ships which come loaded from South Arabia. There is a toll collector *(paralemptes)* of a 25% tax on imported goods, and for security there is a centurion *(hekatontarches)* with soldiers.[134] Debate centers upon the nationality of the *paralemptes*, the *hekatontarches*, and the troops stationed at Leuke Kome. The term *paralemptes* could, as we have seen, be Ptolemaic or Roman. The rank of *hekatontarches* appears in several first and second century sources and refers to a Roman centurion.[135] Because these titles elsewhere seem to refer to Roman officials, some might infer that the passage in the *Periplus* also refers to them. Nabataea had been a Roman client state since 63 B.C. The fact that the Romans regularly stationed troops and tax collectors in client

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[133] Pliny *NH* 12.32.65: iam quacumque iter est aliubi pro aqua aliubi pro pabulo aut pro mansionibus variisque portoriis pendunt, ut sumptus in singulas camelos.* DCLXXXVIII ad nostrum litus colligat, iterumque imperii nostri publicanis penditur.

[134] *PME* 19: Ἐκ δὲ τῶν εὐωνύμων Βερενίκης ἀπὸ Μυὸς ὅρμου δυσὶ δρόμοις ἢ τρισὶν εἰς τὴν ἀνατολὴν διαπλεύσαντι τὸν παρακείμενον κόλπον ὅρμος ἐστὶν ἕτερος καὶ φρούριον, ὃ λέγεται Λευκὴ Κώμη, δι' ἧς ὁδός ἐστιν εἰς Πέτραν πρὸς Μαλίχαν, βασιλέα Ναβαταίων. Ἔχει δὲ ἐμπορίου τινὰ καὶ αὐτὴ τάξιν τοῖς ἀπὸ τῆς Ἀραβίας ἐξαρτιζομένοις εἰς αὐτὴν πλοίοις οὐ μεγάλοις. Διὸ καὶ εἰς αὐτὴν καὶ παραλήπτης τῆς τετάρτης τῶν εἰσφερομένων Φορτίων καὶ παραφυλακῆς χάριν ἑκατοντάρχης μετὰ στρατεύματος ἀποστέλλεται.

[135] See Mason (1974):41-42, 163 for ἑκατοντάρχης and its variation ἑκατόνταρχος; New Testament, *Acts* 10.1; *Matthew* 8.8; *Luke* 7.2; 23.47; Josephus, *AJ* 9.143; Plutarch, *Pompey* 78.1.

states such as Nabataea has led some scholars to conclude that the tax collector and centurion at Leuke Kome were Roman.[136]

We should note, however, that the Nabataeans often borrowed Ptolemaic and Roman military terms. Funerary epitaphs from Hegra, a Nabataean settlement in northwest Saudi Arabia, indicate that the Nabataean army used the titles *hekatontarches*, *hipparch*, *chiliarch* and *strategos*.[137] Lower echelon Nabataean administrative titles such as *paralemptes* might also have been borrowed from the Ptolemies and Romans. Thus any conclusions as to the nationality of the officials and troops stationed at Leuke Kome based on their titulature are inconclusive. They could have been either Nabataean or Roman.

The 25% customs levied on goods arriving at Leuke Kome seems excessive. While there are precedents for Roman tax collectors and troops in client states, there are only three—from Egypt and Palmyra—for levying such an excessive customs toll. Indeed, one scholar emends the *tetarte* of the *Periplus* to *tessarakostes* (2½%), an *ad valorem* rate commonly found throughout the Roman empire.[138]

The 25% customs levied at Leuke Kome might have been a protective tariff inherited by the Romans from the Ptolemies. But if the purpose of the 25% tariff was to drive ships to Egyptian harbors, it failed. *Periplus* 19 says that the harbor at Leuke Kome was filled with vessels belonging to Arab traders. Obviously the toll did not diminish trade at Leuke Kome.[139]

I propose an alternative solution. The 25% levied at Leuke Kome may have been a protective tariff, but it was not designed to drive commerce to Egyptian ports. The 25% duty was levied on goods coming by sea from South Arabia. Transporting goods by sea was cheaper than by land [140] and would permit the shippers to avoid the tolls levied on caravans coming to Nabataea/Provincia

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[136] See Josephus, *BJ* 1.128-130, 159; 178; a Roman denarius commemorates King Aretas of Nabataea's submission to the curule aedile M. Aemilius Scaurus in 58 B.C. See. E. Babelon (1885): 120 no. 8 and (1886):322 no. 8; see also E. A. Sydenham (1952):151 no. 912 and note; 152 nos. 913-914 and plate 25; Raschke (1978):664, 981-982 nn. 1348-1350; for Roman troops and tax collectors in client states see Raschke (1978):982-983 nn. 1351-1352 who cites other scholars who believe that the *Periplus* refers to Romans at Leuke Kome; see also Hirschfeld (1905):80 n. 6 who believes that the *hekatontarches* in *Periplus* 19 was a Roman centurion.

[137] Jaussen and Savignac (1909):193-194 for *hekatontarches*; 153-155, 180-181, 193-194, 202-204 for *hipparch*; 189-190 for *chiliarch*; 153-154, 184-185, 193-194, 196-198, 206, 213-216, 218, 219(?), 224 for *strategos*; see also Negev (1976b):203-236; for the appearance of a Nabataean *hipparch* in the Hauran see E. Littmann (1914):71-74 no. 96.

[138] Hirschfeld (1905):80-81.

[139] M. I. Rostovtzeff (1907-1908):306-307; see also Warmington (1928):309; Fiesel (1925): 58 believes that it was a transit toll; Wallace (1938):257, citing Strabo 16.4.23, notes that despite the 25% toll caravans continued to come from Leuke Kome to Petra like an army. Yet there is no evidence that the 25% duty mentioned in *PME* 19 was levied in Strabo's day, which may explain why caravans to and from the port were so numerous at that time.

[140] A. H. M. Jones (1964):841-842; *SEHRE*:146.

Arabia from South Arabia. This 25% tariff may have been levied on goods brought by sea to protect wares normally transported by caravan.

Rome subjected Palmyra to strong political influences between A.D. 12-17 when the Syrian legate Creticus Silanus defined at least the western boundaries of that desert state. There are a number of documents from Palmyra dating to the principate of Tiberius (reign AD 14-37) including several Roman military dedications dating between A.D. 14-19. This inscriptional evidence suggests that Palmyra had been incorporated—at least temporarily—into the province of Syria as early as the reign of Tiberius. Further evidence of Romanization reveals itself in the nomenclature and affiliation of some Palmyrene citizens who assumed the tribal names of the emperors Claudius and Nero.[141]

This evident Romanization of the Palmyrene population also had its fiscal side. Two documents, a trilingual inscription in Greek, Latin and Palmyrene set up by the publican (tax collector) L. Spedius Chrysanthus in A.D. 58 and the *portoria Palmyrenorum* decreed by the *boule* of Palmyra in A.D. 137 shed some light on the collection of tolls on the Syrian frontier and, perhaps by analogy, in Nabataea/Provincia Arabia and Egypt.[142] Chrysanthus' nomenclature indicates that he was a Roman citizen of Greek, not Palmyrene, origin. He collected tolls at Palmyra and at least one scholar believes that Chrysanthus was a representative of the imperial fiscus.[143] Alternatively, he could have represented the provincial fiscus of Syria. If either of these assumptions is true it is evident that Palmyra was part of the Roman empire by that date and that the imperial government had a direct interest in profiting from the trade which passed through that desert emporium.

The *portoria Palmyrenorum* deals with the administration of Palmyra's finances, especially the imposition of tolls, and lists the duties levied by the city on specific objects imported or exported through its territory. The decree also records the activities of an imperial freedman named Cilix in the collection of tolls at Palmyra.

There is no indication whether the tolls at Palmyra were fixed or *ad valorem*. Evidence from elsewhere in the Roman world reveals that *ad valorem* rates were standard at that time and this may have been the practice at Palmyra. Yet the *portoria Palmyrenorum* does not state what percentage of the total value of goods imported to Palmyra was levied as a toll. The estimation of 2-2½% based on analogy with *ad valorem* rates elsewhere in the Roman empire is not conclusive. An approximate calculation, however, can be established for myrrh. The decree lists a 25 denarius tariff for each camel load of myrrh carried in alabastra and 13

[141] H. Seyrig (1941b):168.

[142] Dessau (1884):486-533 = *IGRR* III.1056; Seyrig (1941b):168-169 and nn.5-6; D. Schlumberger (1937):271-297 also discusses *IGRR* III.1056; see F. M. Heichelheim, *Roman Syria* (*ESAR* 4):250ff for an English translation of *IGRR* III.1056.

[143] Seyrig (1941b):169.

denarii per camel load carried in goat skins.[144] This seems to indicate that Palmyrene customs officials recognized two qualities of myrrh. Alternatively, differences in rates charged for myrrh in alabastra and goat skins may have been an attempt to equalize the rate on myrrh. More myrrh would have been carried in lighter goatskins than in heavier alabastra if calculated or weighed by container rather than emptied out.

Myrrh prices in 137 are unknown, but the cheapest price mentioned by Pliny may be used to calculate the minimum amount of duty collected. Pliny reported that prices for myrrh varied greatly depending upon quality. Wild myrrh fetched 3-50 denarii, "cultivated" 11 denarii, "Erythraean" 16 denarii and "other types" 16½ denarii per pound (*NH* 12.35.70). Taking these statistics, an approximate percentage figure can be ascertained for tolls levied on myrrh. At 3 denarii per pound, the cheapest myrrh in Pliny's day, a camel load of 692 Roman pounds, fetched approximately 2076 denarii. A 13 denarii toll levied on a camel load of myrrh borne in goatskins[145] valued at 2076 denarii equalled slightly more than ½% of its total value. Even if a camel carried half the 692 pound load, or if myrrh prices dropped in 137 from Pliny's low of 3 denarii per pound, the rates charged by Palmyra were still slight. Nor does the 25 denarii levy on the myrrh carried in alabastra seem excessive. Even when levied twice, once for import into and once for export from Palmyra, the total toll was approximately 1-1½%, half the usual Roman rate of 2-2½%.

We cannot determine *ad valorem* tolls levied on other goods mentioned in the duty list for no wholesale or retail prices are extant. Based on the estimation for myrrh, it is likely that the tolls on other wares were assessed at the same *ad valorem* rate or less as they were not in the same category as myrrh. Perhaps in this calculation one has a clue to Palmyra's economic success. The city earned revenues from the protection and other amenities it provided to merchants,[146] in addition to profits from import and export tolls. However, Palmyra's municipal tolls themselves were low enough not to discourage merchants from using routes that passed through Palmyrene territory. The large volume of traffic resulted in substantial revenues for the city.

The *portoria Palmyrenorum* also reveals that Cilix, an imperial freedman, was involved in toll collection at Palmyra, but his exact function is unclear. It seems

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[144] Dessau (1884):507, 531-532.

[145] Dessau (1884):507, 514; A camel can carry a 500 pound load 25 miles a day. One Roman pound equals .722 English pounds, making 500 English pounds equivalent to approximately 692½ Roman pounds. R. W. Bulliet (1975):20, 168, calculates 600-900 Roman pound loads though the latter figure, which appears in Dio. Sic. 2.54.6, may be exaggerated; for the camel as transportation in antiquity see J. Sion (1935):630; H. Epstein (1954):247-268; E. Demougeot (1960):209-257; on animal transport in general in antiquity see A. Burford (1960):1-18.

[146] Dessau (1884):521-522 notes that an 800 denarius fee was levied on those using water sources at Palmyra and assumes that this was the rate charged caravans using them.

that Cilix received 1 denarius on each camel load passing through Palmyra,[147] but how this was collected and to whom it was remitted are uncertain. The indication that an imperial freedman collected this fee suggests that it was remitted to the provincial fiscus of Syria, or to the imperial fiscus. In either case the emperor was the ultimate beneficiary.

Two inscriptions from the agora of Palmyra reveal that a 25% tax was levied on goods passing between the border of Roman Syria and Parthia. The earlier one, in Greek, is dated July 161 and mentions Marcus Aemilius Marcianus Asclepiades, a senator from Antioch, as *tetartones;* the later, in Greek, Latin and Palmyrene, is dated March 174 and names L. Antonius Callistratus as *manc. IIII (tetartones)*. Both men were Roman citizens of Greek origin who farmed the right to collect the tax. The earlier inscription was erected by merchants from Spasinocharax on the Persian Gulf apparently upon completion of a very lucrative business trip. Evidently they did not consider the 25% tax excessive. The later inscription is not so informative.[148]

Both inscriptions prove that a 25% tax was levied on the Syrian border with Parthia only a generation after the *portoria Palmyrenorum* was issued. It is doubtful that these farmers and the 25% duty replaced Palmyra's right to levy *portoria* for the city treasury. More likely, the farmers merely collected taxes at the border and had nothing to do with the fiscal affairs of Palmyra itself. The high 25% duty levied by the imperial government through its agents may be one reason for the relatively low fees charged by the *boule* of Palmyra on goods passing through its territory; had Palmyra charged more, the caravans might have sought a less costly route bypassing the city.

The fact that the only evidence for levying a 25% customs duty derives from the East, where the fee surely was levied on imported Erythraean Sea wares, suggests that the Romans inherited the toll from their Hellenistic predecessors and that it was not a Roman innovation. This belief seems borne out by the existence of the *tetarte* in Nabataea prior to its annexation by Rome and by the high Ptolemaic duties levied at Pelusium.

## *Conclusion*

Evidence for the Roman government's regulation, organization and taxation of the Erythraean Sea commerce is scanty, but we can draw some conclusions. The government's construction, maintenance and guarding of roads and stations

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[147] Dessau (1884):513-514; Boulvert (1970):399.

[148] de Laet (1949):334ff; Seyrig (1941c):263-266; Rey-Coquais (1978):71 and n. 380 mentions only a single inscription and incorrectly dates it to the early second century; I. A. Richmond (1963):53 also mentions only one inscription of A.D. 161; for further commentary on the 25% duty levied in the East see R. Andreotti (1969):221ff.

in the Eastern Desert of Egypt facilitated this trade and it seems that the government profited by selling passports, as forms of toll, to those using these facilities. These passports also allowed the Roman government to keep some kind of record of the movement of commerce in the Eastern Desert.

The government may also have regulated the Erythraean Sea trade into and out of Egypt by funneling it exclusively through the Nile emporia of Coptos and Antinoë and perhaps Dendereh. Although there is no epigraphic evidence suggesting that the Roman government planned the dominance of Coptos and Antinoë in this role, the geographic location of Coptos naturally favored it as the main Nile emporium for the Erythraean Sea trade. However, this was not the case with Antinoë which, although closer to Alexandria than Coptos, was situated too far north of the Red Sea ports it served to enable it to compete successfully with Coptos as a transshipment point.

Resupply of the military garrisons in the Eastern Desert seems to have fallen upon the civilian merchants trading with the Red Sea ports thus diminishing the cost borne by the government for the victualing of its troops there. It is evident that the Roman government was willing and able to facilitate commerce between the Nile and the Egyptian Red Sea ports, but it sought monetary reimbursement for its efforts from the merchants and travellers passing through the area.

Although there is no evidence for Roman governmental organization of Erythraean Sea trade guilds, inscriptions from Egypt mentioning *naukleroi* and *emporoi* suggest that the imperial government did regulate both Roman and non-Roman traders and shippers involved in this commerce. By analogy with the *naukleroi* and *emporoi* perhaps the caravaneers operating between the Nile and the Red Sea ports were also subject to some government regulation. However, a study of the epigraphic evidence seems to indicate that large companies controlled no aspect of the Erythraean Sea commerce inside Egypt. Rather, small firms participated in commerce between the Nile and the Egyptian Red Sea ports. The nomenclature of members of these companies reveals that the Erythraean Sea commerce involved a large percentage of Egyptians, Greeks, Graeco-Egyptians, Hellenized Egyptians, Egyptianized Greeks, Arabs and some Roman citizens, mainly from the eastern half of the empire.

Although nothing is known of the organization of Roman subjects residing abroad for commercial purposes, the presence of Yavana trade colonies in South India and the regulation of trade by South Indian and South Arab states suggest that all merchants needed some form of organization in order to carry on their trade.

Several imperial slaves and freedmen conducted business for themselves or their patrons at the Red Sea ports indicating some imperial involvement in the Erythraean Sea trade. The appointment of other imperial freedmen as directors of toll offices collecting duties and tariffs from all over the empire is additional

evidence of imperial financial interest in commerce.[149] However, in the East there is an indication that the government was not content with levying taxes merely at imperial or provincial frontiers. Specifically, the activities of Chrysanthus and Cilix in toll collecting at Palmyra show that the imperial government profited from revenues at the municipal level accuring from trade between the Roman empire and its eastern and southern neighbors, India and South Arabia. The Erythraean Sea commerce was potentially so lucrative to the Roman government that it may have installed imperial tax collectors to levy a share of the taxes in municipalities in the Roman East through which a large volume of the Erythraean Sea trade passed.

We can make some tentative observations about Roman duty and toll collection on wares imported into Egypt and Nabataea/Provincia Arabia from South Arabia, South India and Ceylon. At the imperial boundaries in Syria and Nabataea/Provincia Arabia the tax collectors seem to have farmed the right to collect revenues on the Erythraean Sea trade from the Roman government. In the municipalities—to judge by Palmyra alone—the imperial government's own agents collected duties.

That the imperial government farmed so lucrative a tax as the *tetarte* to private individuals rather than gather it directly through its own agents suggests that the tax was not easily collected. Perhaps many merchants sought to smuggle goods into Roman territory by surreptitious routes thereby avoiding payment of the tax. Because it was the tax farmer's concern and his own source of income, he, rather than the imperial government, was responsible for seeing to it that all merchants engaged in the Erythraean Sea commerce paid the *tetarte*. This must have been an expensive and time consuming occupation which the government gladly rented out to private individuals. On the other hand, that the Roman government's own agents collected duties at Palmyra suggests that toll collection at the municipal level was relatively easy and risk-free. Unfortunately, these examples of tax farming and direct collection by the government in Syria and Nabataea/Provincia Arabia may not apply to Egypt because of the unique position of that region in the empire.

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[149] For freedmen *praepositi* in the Gallic provinces see *CIL* V.5090 of A.D. 217 or 246 and T. Mommsen, ed. (1854):45 no. 236=*CIL* XIII.5244; for the Alpes Maritimae see *CIL* V.7643 of the early third century; for other freedmen *praepositi* see Hirschfeld (1905):88-89 and 89 n. 1.

CHAPTER FIVE

# THE GENESIS AND EVOLUTION OF ROMAN POLICY IN THE ERYTHRAEAN SEA

In the region of the Erythraean Sea the Roman government evolved an economic policy based not on concerted prescriptive action, but founded on precedents established early in the principate. The term "policy" can only be applied in retrospect to the cumulative behavior of a number of Roman emperors over a lengthy period. In antiquity there was usually no clear boundary between economics and politics; economics was a branch of politics,[1] Within the Roman government political, diplomatic and military considerations usually overshadowed, but were not mutually exclusive from, economic motives when Rome annexed new territory. Therefore, any examination of Roman "economic" policy must take into account political, diplomatic and military motives and consequences of such a policy.

We have seen that the Roman government promoted the Erythraean Sea commerce. Evidence cited in chapter 2 demonstrated that the Romans used many goods imported to the empire from South Arabia, South India and Ceylon for medicinal, culinary, funerary and religious purposes. Furthermore, we saw that the Roman government may have regulated the prices of these products in order to provide them at a fair price, at least in the city of Rome. The Roman government was concerned for the welfare of its citizens, particularly in the capital, and the posited introduction of price controls or expenditure of a considerable portion of the public wealth on relief in Rome—e.g. the grain dole and games—is evidence that certain sectors of the economy were highly regulated, usually for political reasons. For example, the class of small farmers had to be preserved because it represented basic Roman values. The government's reasons for aiding the farmers were moral and political, but the effects were economic;[2] those small farmers wiped out by the large latifundia would, most likely, become part of the growing idle masses in the capital or in other large Italian cities for which the government had to care.

The Roman government encouraged Erythraean Sea commerce by constructing, repairing or expanding facilities and by protecting those engaged in this trade. There is little evidence for state organization of Erythraean Sea trade, but given the close government supervision of other aspects of economic

[1] C. G. Starr (1980): 35, 40 n. 33; M. I. Finley (1973):159ff; A. D. Winspear, L. K. Geweke (1935):197.

[2] Winspear and Geweke (1935):197-198.

life in Egypt, we might infer that there was some regulation of Erythraean Sea merchants trading with Egypt. The involvement of imperial slaves and freedmen demonstrates that the government/emperor received direct income from this trade. In addition, the government received *vectigalia* (tolls, taxes and duties) from Erythraean Sea commerce.

Investigation of three periods when the imperial government's interest in the Erythraean Sea region was especially intense—the reigns of Augustus-Tiberius, Trajan-Hadrian and Septimius Severus-Caracalla—helps to answer a number of questions. Why did Rome annex territory in the region of the Erythraean Sea; was it tied to economic or political considerations? What do embassies between Rome and other Erythraean Sea states reveal of Roman policy in the region? What were contemporary attitudes towards Roman expansion in the area? How did the concept of "cost-benefit" affect Roman policy in the Erythraean Sea? How did Rome integrate newly won territories in the region of the Erythraean Sea into the empire and what does this indicate about Roman policy in the region? Did the shifting trade routes in the region of the Erythraean Sea in the first and second centuries affect Roman policy? Finally, how consistently was Rome's Erythraean Sea "policy" executed during the period from Augustus to Caracalla (30 B.C.-A.D. 217)?

### *The Roman Economy, an overview*

Initial evidence suggests that the Roman empire had, to some degree, a single, integrated economy. There was an empire-wide trade in textiles and in some luxury goods and, to some extent, in fine pottery, timber, metals, grain, wine and oil. The attempt by the Roman government to have its imperial coinage accepted in all areas of the empire suggests that it conceived of the empire as an economic unit. However, propaganda messages aside, the primary purpose of this coinage was to pay the troops and facilitate tax collection. Thus, the central government seems to have viewed imperial unity basically only in terms of general taxation and defense. In reality within the Roman empire as a whole we cannot detect a single integrated economy, but rather a number of regional economies. The Roman government undoubtedly realized this by dividing the empire into a least thirteen or fourteen customs[3] zones for fiscal purposes. Each of these zones represented a broad, separate regional economic conglomeration of smaller local and municipal economies. The various regional and municipal coinages which continued to be struck and to circulate in different areas of the empire, especially in the East in Asia Minor, Egypt, Syria, Phoenicia and Palestine, as late as the latter half of the third

[3] S. J. de Laet (1949):119.

century also suggest that the empire was composed of a medley of territories each with its own economic problems and solutions.[4]

The different economies encompassed by the Roman empire were fundamentally agricultural market exchanges based upon the principle of *laissez faire*. A market economy requires a physical location, a market place and an institutionally protected area where goods and services are bartered to maximize the profits of the buyers and sellers.[5] In the Roman empire the market economy was manifested in the local and regional *fora* and *agorai* usually under the supervision of municipal or provincial authorities—the *aediles* and *agoranomoi*. It seems that the imperial government itself neither desired nor could realistically hope to regulate these local and regional market places.

Two other types of economic exchange systems existed inside the Roman empire, but neither was nearly as important as the market exchange: the redistributive economy and reciprocity exchange. The redistributive economy involves a central institution which organizes production and stores, redistributes and trades produce.[6] This type of economy is especially evident in the ancient Near East temple-priest societies. Within the Roman empire the redistributive economy is best exemplified by the grain dole in the city of Rome and in the Egyptian city of Oxyrhynchus. Alexandria and several of the nome *metropoleis* of Egypt also had a grain dole as did Antioch and some other communities in the East.[7] In the later Roman empire this type of economic exchange became increasingly prominent as the army and central bureaucracy drained more and more of the empire's wealth for their own maintenance.[8] Reciprocity exchange, commonly associated with tribal or "primitive" societies,[9] was relatively rare and played no noticeable role in the day to day operation of economies within the Roman empire; the exchange of gifts occurred only on a sporadic basis and cannot be considered an important part of economic activity. Imperial gifts to German tribal leaders for political reasons—perhaps in an attempt to establish a patron-client relationship so essential to the operation of Roman society—and gifts given the Roman emperors by foreign embassies are the principal examples during the Roman period of this type of economic exchange.

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[4] For local coinage in base metal in Asia Minor during the Roman imperial period see K. Kraft (1972); for Palestine in the Roman period see L. Kadman (1956, 1957, 1960, 1961); G. F. Hill (1914); for coinage of the Decapolis see A. Spijkerman (1978); for Egypt in the Roman period see R. S. Poole (1964); A. Geissen (1974 and 1978); E. Christiansen and A. Kromann (1974); for Syria and Phoenicia in the Roman period see W. W. Wroth (1899); G. F. Hill (1910).

[5] T. F. Carney (1973):22; R. MacMullen (1970):333-341.

[6] Carney (1973):21.

[7] For the grain dole in Egypt see Lewis (1983):39-40 and Turner (1975):19, 22-24; for the grain dole in Asia Minor see Balland (1981):208, 213ff.

[8] A. H. M. Jones (1964):824-872; K. Hopkins (1980): 123-124.

[9] Carney (1973):21.

What relationship, if any, can we find between Rome's numerous foreign wars and the empire's economic prosperity? Can we accept the Marxist economic interpretation of history, *viz.* that economic gain was a motive or at least partial cause for a number of Rome's wars?[10] This is an issue which has prompted lively debate. Recently, W. V. Harris has argued that economic gain was an integral part of a successful war, the expansion of power. Harris believes that it was not possible for the Romans—especially the Roman aristocrats who determined policy in the Roman state—to dissociate the expectation of gain in the form of land, plunder, slaves and tribute from expectation of a successful war.[11] However, T. Frank, E. Badian and J. Hatzfeld, drawing on the ancient sources, rebut the Marxist concept of historical materialism. M. I. Finley asserts that none of Rome's wars was economically motivated.[12] We shall investigate the issue in this chapter.

### *Augustus and Egypt*

The reign of Augustus initiated the period of direct Roman involvement in the region of the Erythraean Sea. Three major events which occurred in his reign—the annexation of Egypt in 30 B.C., the campaign of Aelius Gallus to South Arabia in 26/25 B.C., Gaius Caesar's expedition to "Arabia" in A.D. 1—and contemporary Roman and non-Roman reactions to these events shed light on Roman aspirations in the region. The methods Rome used to integrate newly acquired Eastern territory into the empire also reveal Roman political and economic aspirations.

Augustus' victory over Marc Antony and Cleopatra at Actium, off the western coast of Greece, in 31 B.C. terminated a century of Roman civil wars. The political and military upheavals which spawned troubles in the years preceding Actium were particularly damaging to regions of the Eastern Mediterranean where many contenders fought, recruited troops, and obtained cash and supplies to support their respective causes.[13] Prior to 67/66 B.C. piracy had further destabilized the political-economic life of the Eastern Mediterranean littoral.[14]

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[10] Scholars supporting this Marxist view include S. A. Nodelman (1960):83-121; on Trajan's Parthian War see J. Guey (1937):19, 30, 119, 139ff; E. H. Warmington (1928):91-92; J.-P. Rey-Coquais (1978):54.

[11] Harris (1979): 2, 54, 56-57; cf. J.A. North (1981): 1-9.

[12] T. Frank (1912/1913):233-252; Badian (1968):16-28; J. Hatzfeld (1919):369-376; M. I. Finley (1973):157-158.

[13] Appian, *Bell. Civ.* 2.38; 2.49; 2.70; 2.71; 2.92; 4.5; 4.52; 4.60-4.65; 4.72-4.74; 4.76-4.77; 4.79-4.82; 5.3; 5.5-5.9; 5.55; Florus, *Epitome of Roman History*, Book 2; J. Rougé (1966): 275; G. W. Bowersock (1965):1-13.

[14] Florus, *Epitome of Roman History* 1.41.6-15 on Pompey's suppression of piracy in the eastern Mediterranean; H. A. Ormerod (1967):190-247; C. G. Starr (1975):2-4.

Augustus attempted to remedy the region's political and economic troubles which he had inherited. Because they recognized the great political and economic importance of the Eastern Mediterranean either Augustus or Agrippa constantly resided in the region between 24-13 B.C.[15] Augustan solutions to the problems confronting the Eastern Mediterranean lands in general, and the region of Egypt, Nabataea and Judaea in particular, were dictated, in part, by the fact that the area had never been an economic unit in the Hellenistic period. Separate economic zones generally paralleled the oftentimes fluid political-geographic boundaries of the different Hellenistic states of the region: Ptolemaic, Nabataean, Hasmonaean, Seleucid. Each had its own coinage, economic substructure and policies, though all might be joined, to some extent, by inter-regional trade.

The Romans annexed Egypt before they became directly involved in the affairs of the region of the Erythraean Sea. Although Egypt, with the notable exception of Alexandria, figures little in the extant writings of ancient authors between the settlement of the southern frontiers of Egypt by Petronius in *c*. 22 B.C. and the reign of Nero (A.D. 54-68), we can make some observations about Augustus' activities in the area. Augustus was impressed by the amount of booty, in both moveable property and real estate, which fell to him after the annexation of Egypt. Velleius Paterculus (2.39.2) says that Egypt provided the Roman state with nearly the same amount of tribute as the conquest of Gaul, which Suetonius estimates (*Julius Caesar* 25.1) at 40 million sestertii. The author of the *Epitome de Caesaribus* (1.6) adds that in Augustus' day Egypt sent 20 million modii of grain annually, enough to feed the city of Rome for four months each year according to Josephus (*BJ* 2.386). It is impossible to determine the accuracy of these figures. The 20 million modii mentioned by the sources do not necessarily define Egypt's contribution to Rome's food supply in 30 B.C. The calculation that Egyptian grain fed Rome for four months each year is based upon figures from the Flavian (A.D. 69-96), not the Augustan (30 B.C.-A.D. 14) period. These figures cited by the *Epitome* and by Josephus are questionable on other grounds. Are they reasonable, inflated or do they represent only tribute and not the total amount of Egyptian grain imported to feed the city?[16]

Booty from the initial Roman annexation of Egypt may have totalled one billion sestertii.[17] This huge sum comprised Cleopatra's treasury—which, for the most part, was composed of loot which she acquired from the temples of Egypt and from her political enemies to help finance her war against Octa-

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[15] Bowersock (1965):14-41, 112-121.

[16] For discussion see Garnsey (1983b):118-130 and Casson (1980a):21ff.

[17] T. Frank (1933):145-146; K. Hopkins (1980):117 and n. 49 believes that Frank's estimate is exaggerated.

vian—the Ptolemaic royal estates and the property of Ptolemaic nobles and officers who had fought against Octavian.[18] Dio Cassius (51.21.5) refers explicitly to vast amounts of money in circulation in Rome in 30 B.C. as a result of Augustan conquests. Perhaps the huge booty from Egypt flooding into Rome drove interest rates down, as Dio says, from 12% to 4%. The removal of so great an amount of liquid capital from Egypt undoubtedly slowed the country's recovery so that in the first few years of the Roman occupation Egyptian annual tribute was assessed at the low rate of 40 million sestertii.[19] The amount of tribute Egypt paid increased as prosperity returned to the new province.

Other than some vague remarks in Strabo, almost nothing is known about the economic health of Egypt under the last of the Ptolemies nor at the time of the Roman annexation. Strabo says (17.1.12) that Alexandria suffered economic decline under the later Ptolemies, but he does not specify exactly when this occurred. Some scholars point to the debasement of later Ptolemaic coinage to support their contention that Strabo was essentially correct in his estimation of the poor state of the Egyptian economy under the later Ptolemies.[20] However, Ptolemaic debasement of the coinage began as early as the third century B.C. Much of the Ptolemaic economy was founded on agriculture and any exchange which took place could have been based on barter and tribute and taxes paid in kind;[21] debasement of the coinage cannot be taken, in this case, as the sole index of economic prosperity. Even if coinage had played a prominent role in the Ptolemaic economy, L. C. West and A. C. Johnson argue that currency in Egypt, at least in the later Ptolemaic and Roman periods, was fiduciary.[22] Therefore debasement of the coinage would not invariably reflect economic decline although it might have signalled a period of inflation. J. G. Milne, citing Strabo's claim (17.1.13) that Ptolemy Auletes' annual income from Egypt in the mid-first century B.C. totalled 12,500 talents, argued that Egypt was still economically sound at that date.[23] However, between Auletes and the annexation of Egypt the Egyptian economy declined both because of Cleopatra's exactions to help finance the war against Octavian and from neglect of Egypt's irrigation system which was essential to the maintenance of Egypt's economic base, its agriculture.

Augustus, recognizing that Egypt's main economic strength was agricultural production, greatly improved Egypt's irrigation network by redigging old

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[18] Frank (1933):145-146; S. L. Wallace (1938): 343; Dio Cassius 51.5.4-5; 51.17.6-8.

[19] Wallace (1938):343.

[20] L. C. West and A. C. Johnson (1944):5-6, 78 assert that the last 100 years of Ptolemaic rule was a period of financial difficulty; A. C. Johnson (1951):3.

[21] M. I. Rostovtzeff, *SEHHW*: 263, 274, 284, 300, 403-404; Cl. Préaux (1978):283, 383.

[22] West and Johnson (1944):1; Johnson (1951):3-4.

[23] J. G. Milne (1927):1ff; Wallace (1938):343.

canals. The use of soldiers to clear these canals is sufficient proof of the large and organized scale on which the work was conducted.[24] The necessity for this large scale undertaking by the Roman government presupposes a gross neglect of the irrigation system under the later Ptolemies. Augustus' campaign to clear the irrigation canals, which probably occurred between *c.* 28-25 B.C., resulted in a grain surplus in the following year.[25] This surplus allowed the Egyptian Prefect Petronius to export grain to Judaea, which was suffering from famine at the time (Josephus, *AJ* 15.307ff). Before clearing, Egypt's largest harvests were attained only when the Nile rose fourteen cubits (a cubit is approximately 46 cm.); famine occurred when the river rose eight cubits or less. After Augustus' project was completed a twelve cubit rise in the river resulted in maximum agricultural productivity; flood waters rising to eight cubits were sufficient for an average harvest.[26]

Egypt—whose position within the Roman empire as a whole may have been a special one[27]—was to be one of the empire's greatest sources of revenue. Many of Augustus' reforms in Egypt are poorly documented. However, we do know that tighter control over the priesthood and easing of the Ptolemaic monopoly system did increase revenues for Rome.[28] Although there was less direct government involvement than had been the case under the Ptolemies, Egypt was still the most regulated economy in the empire.

Strabo claims (17.1.13) that careful Roman management of the Egyptian economy and expansion of trade with India increased revenues for Rome to a higher level than had been realized under the late Ptolemies. However, Egypt's contribution to Augustus' revenues probably never reached the levels realized earlier under Ptolemy Philadelphus—14,800 talents—or later under Vespasian (A.D. 69-79)—*c.* 140 million denarii and 20 million modii of grain, but revenues were sufficient, together with legacies from his friends, to cover the expenses which Augustus lists in the *Res Gestae*.[29]

Egypt was geographically isolated and difficult to approach by land because of the surrounding deserts. Access by sea could be easily prevented. Because it was so easily defended and of such economic importance to the emperor, senators—the greatest threat to the authority of Augustus—were forbidden

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[24] Dio Cassius 51.18.1; Strabo 17.1.3; Suetonius, *Augustus* 18.2; D. J. Crawford (1976):40-41; W. L. Westermann (1917): 239.

[25] Westermann (1917):240-243.

[26] Strabo 17.1.3; Milne (1927):6; M. I. Rostovtzeff (1929):346; for more on the Nile flood of Egypt in the Roman period and its fiscal effect on the economy see D. Bonneau (1971); G. Rickman (1980):115-116.

[27] On Egypt's "special" status see Tacitus, *Ann.* 2.59; Tacitus, *Hist.* 1.11; Philo, *Flaccus* 19.158; Milne (1927): 11; however cf. A. H. M. Jones (1970):101 and J. G. Keenan (1982):30-31.

[28] N. Lewis (1970):3ff; G. M. Parássoglou (1978):4ff.

[29] *Res Gestae* 3.15-18; Frank (1933):147; P. A. Brunt (1971):332 and n. 1.

entry to the province without explicit imperial permission.[30] Any force in Egypt hostile to the central government could easily cut off grain shipments to Rome. The resulting famine and unrest in the capital could cause serious trouble for the emperor in power.[31]

*The Campaign of Aelius Gallus to South Arabia*

Undoubtedly the most important event in the reign of Augustus relating to Roman "policy" in the region of the Erythraean Sea, besides the annexation of Egypt, was the expedition of Aelius Gallus to South Arabia which is traditionally dated 25/24 B.C., but may, in fact, have taken place in 26/25 B.C.[32] There are five main ancient references to the campaign and numerous modern interpretations of its significance. Of the ancient sources Strabo (16.4.22ff) gives the fullest account, but the *Res Gestae* (5.26), Pliny the Elder (*NH* 6.32.160ff), Josephus (*AJ* 15.317) and Dio Cassius (53.29.3-8) also mention it.[33]

According to Strabo Gallus built about 80 warships and 130 transport vessels to convey his army of 10,000—including 500 Jews sent by King Herod of Judaea and 1000 Nabataeans sent by King Obodas III under the Nabataean vizier Syllaeus—from Cleopatris (Clysma) at the northern end of the Gulf of Suez, to Leuke Kome in Nabataea. Sickness and shipwreck beset the force and upon arrival at Leuke Kome Gallus' army was compelled to spend the summer and winter waiting for the sick to recover.

Gallus then marched south through the territory of Aretas, a kinsman of the Nabataean king Obodas III, and through Ararene ruled by King Sabos. The first city seized by the Romans was Negrani. Subsequently Asca, Athrula and Marsiaba were attacked and, all but the last, captured. Lack of water forced the Romans to raise their siege of Marsiaba, at which point they were only two days' journey from the land that produced aromatics. Gallus had spent six months in his march from Leuke Kome to Marsiaba, but was able to return to Egra, a port in Obodas' territory, via Negrani, Hepta Phreata, Chaalla and Malotha, in 60 days. From Egra the remnants of the force went by ship to Myos Hormos and thence to Coptos and Alexandria. Only 7 men

[30] Tacitus, *Ann.* 2.59; M. A. Levi (1924):231-235.

[31] For riots due to famine during the reign of Commodus see *HA*, *Commodus* 14.1-3 and Dio Cassius, epitome 73.13.1ff; see also Z. Yavetz (1969):137. The emperors went to great lengths to insure Rome's grain supply, see D. van Berchem (1939):67-83; P. D. A. Garnsey (1983a):56-65 and Garnsey (1983b):118-130. For price fluctuations of grain from Egypt see R. P. Duncan-Jones (1976):241-262.

[32] S. Jameson (1968):76ff. proposes, rather persuasively, this earlier date.

[33] Some of the Augustan poets may also allude to it briefly: Horace, *Odes* 1.29.1ff; 1.35.40; Vergil, *Aeneid* 8.704-706; Propertius, *Elegies* 2.10.15-18.

were lost in battle, but a large, unspecified number died from non-hostile causes. Strabo blames the failure of the expedition on the treachery of Syllaeus.

Modern studies of the expedition have focused on a number of issues: Gallus' rank at the time of the campaign; the purpose of the expedition; the chronology of the expedition in relation to that of Petronius' against the Ethiopians; why the army was conveyed from Cleopatris to Leuke Kome by ship instead of from a more southerly port to some point in South Arabia itself, thereby minimizing the grueling overland march; why Herod and Obodas sent troops to participate in the expedition; the identification of the place names mentioned by Strabo; and the reason Strabo attributes failure of the expedition to Syllaeus. The reason for Gallus' sudden withdrawal from South Arabia and the subsequent benefits of the expedition are also problematic. We will address some of these issues.

The rank Gallus held as commander of the expedition is unknown, but if we accept the earlier date of 26/25 B.C. for the campaign then he would have been Prefect of Egypt; we know that Petronius had succeeded to that position before the end of 25 B.C.[34] Strabo, who visited Egypt about the time of the campaign and was a friend of Gallus, says that Augustus sent Gallus to explore the tribes and territory and to win over or conquer the Arabs, who had accumulated considerable wealth from the sale of aromatics and precious stones. Judging by the size of the expedition and the great number of ships built to transport and protect the troops, we must accept the motives given by Strabo for the expedition. The campaign did not seek a more defensible frontier—a compelling factor in many of Augustus' foreign wars in the East[35]—for South Arabia lay hundreds of miles from the nearest Roman border. Nor was it a preemptive strike against the threat of Arab invasion. The expedition was economically motivated. Some scholars believe that Gallus' expedition sought to eliminate the monopoly of the South Arabian middlemen in the lucrative transit trade between India and the Roman world,[36] but this is unlikely. Roman maritime trade with India had already grown significantly before the expedition.[37] Strabo clearly says that Augustus sought to control South Arabia either as a subservient client or as a vanquished foe in order to secure the wealth of the region.

It is doubtful that Gallus' expedition was part of an overall Roman plan to control both sides of the Red Sea down to the Bab el-Mandeb.[38] Strabo says

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[34] Westermann (1917):239; S. Jameson (1968):73-74, 78ff; N. Lewis (1975):299.

[35] H. E. Stier (1975):16ff; see also C. M. Wells (1972):11-12 on the Aelius Gallus expedition.

[36] M. I. Rostovtzeff, *SEHRE*:53, 66; G. F. Hourani (1952):294; E. Leider (1934):54; A. Sarasin (1930):17; J. Schwartz (1960):23-24.

[37] *CAH* 10:252.

[38] J. Desanges (1978):308 also espouses this theory.

that Augustus sent Gallus to explore Ethiopia (16.4.22), but he says nothing of conquest. Some might suggest that the expeditions of Petronius to Ethiopia indicate an overall military effort to possess these regions, and Augustus' statement in the *Res Gestae* (5.26):

> By my order and command two armies were led against Ethiopia and Arabia Eudaemon at approximately the the same time...[39]

lends support to such arguments.[40] However, the Roman penetration of Ethiopia seems to have had other, more limited, objectives. Ethiopian attacks into Egypt during the absence of much of the Egyptian garrison in Arabia would have required retaliation, but there is no hint in descriptions of Roman forays into Ethiopia that Rome contemplated permanent conquest of the region.[41] The payment of φόρος by the Ethiopians (Strabo 17.1.54) was, probably, for damages inflicted by them inside Roman territory on Roman property and not, as S. Jameson contends, a tax levied on them as subjects of Rome.[42]

Strabo says that the expedition's ships were built at Cleopatris and that the expedition sailed from that port to Leuke Kome. At least one scholar believes that it would have made better military sense to sail from a port further south, perhaps Berenice, Leukos Limen or Myos Hormos, directly to South Arabia, thereby minimizing an overland march.[43] That the timber necessary for shipbuilding was more readily available at Cleopatris than at other Red Sea ports in Egypt may have been a determining factor. But there were additional logistical elements as well as the wind patterns in this area of the Red Sea, unconsidered by many scholars, which dictated that the expedition sail from Cleopatris.

I suggest that that it was much easier to accommodate 10,000 men at Cleopatris than at other Egyptian Red Sea ports. To shelter, water and feed an extra 10,000 men at one of the other Red Sea ports supplied primarily across the Eastern Desert would have been an insurmountable task.[44] At Cleopatris,

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[39] Meo iussu et auspicio ducti sunt duo exercitus eodem fere tempore in Aethiopiam et in Arabiam quae appellatur Eudaemon. . . .

[40] W. T. Arnold (1906):191 argued that the Arabian and Ethiopian campaigns were only reconnaissance missions; on the chronology of the two campaigns see Jameson (1968):71-84; for the Ethiopian campaign in general see A. Vogliano (1940): the entire work, but especially chapter 5; for Hellenistic and Roman commerce with Ethiopia via Egypt see Cl. Préaux (1952): 257-281; see also Rostovtzeff, *SEHRE*:303; Schwartz (1960):19; H. Kortenbeutel (1931):52-53.

[41] Strabo 17.1.54; Pliny, *NH* 6.35.181; Dio Cassius 54.5.4-6; cf. J. Lesquier (1918):13ff also believes this; J. Leibovitch (1936):271-277; Burstein (1979):95-105 for Nubia and "Ethiopia" in late Ptolemaic and early Roman times.

[42] Jameson (1968):81; for more on φόρος in general and specifically with regard to Ethiopia see Braund (1984):63-66.

[43] E.g. Kortenbeutel (1931):55.

[44] D. S. Whitcomb and J. H. Johnson (1982c):1, 4, 11 discuss the desolate terrain in the Eastern Desert in the region of Quseir al-Qadim, the ancient Leukos Limen. The author spent Jan.-early March 1980 excavating at Quseir al-Qadim and surveying the surrounding area. The region is as barren today as it seems to have been in the Roman period.

relatively close to the Nile and the Delta, the job would have been less burdensome. Secondly, A.W. Gomme demonstrated that ancient Greek warships had little extra space to carry food and water because of their relatively small sizes and large crews.[45] If we apply Gomme's thesis to the Roman logistical situation in the Red Sea we must conclude that Roman warships operating in the Red Sea probably had to put to shore every 24 hours or so to feed and rest the crews. This required a friendly or neutral coast which could provide supplies. As there were only desolate coastal regions or small ports incapable of supplying such a large military expedition for a great distance on both sides of the Red Sea south of Egypt, it is doubtful, because of supply problems, that the Roman warships could have sailed as far south as South Arabia. Additionally, the Romans could not count on a transport convoy to support an amphibious campaign of 10,000 men for they could not be certain of the duration of the expedition. How could they estimate the quantities of supplies for 10,000 men if their campaign had no specific schedule?

Another important factor dictating that Gallus sail from Cleopatris was the wind pattern in this area of the Red Sea. The winds in the region north of 20° north latitude are prevailing northerlies.[46] They would, given the location of Leuke Kome (described below), have made departure from any other Roman port on the Egyptian Red Sea coast unfeasible. Departure from any of the other Egyptian Red Sea ports would have necessitated sailing north, against the prevailing winds, to reach Leuke Kome; departure from Cleopatris required a voyage to the south with favorable following winds. Although ancient ships could sail against the wind—though probably not more than seven points off the wind[47]—it would have been a lengthy, dangerous trip to sail from any other port in Egypt except Cleopatris.[48] I submit, therefore, that these logistical and wind considerations, not the treachery of Syllaeus, dictated that the expedition sail from Cleopatris, land at Leuke Kome and proceed overland to South Arabia.

Herod and Obodas III sent troops to participate in the expedition, but it is unclear whether Augustus requested their help—both kingdoms were, after all, Roman clients and as such had previously contributed military units upon request—or, alternatively, the Judaean and Nabataean monarchs offered their services voluntarily. Because of their knowledge of the trade routes, Nabataean participation might have facilitated Roman penetration of South Arabia. Yet the length of the outward journey (six months) suggests that Syllaeus was either

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[45] Gomme (1937):192ff; see Lewis (1975):300f. for additional information on Gallus' fleet.
[46] L. Casson (1980b):22, n. 2.
[47] L. Casson (1959):220-221; B. S. J. Isserlin (1955):319-320; however, cf. Pomey (1982): 152-153.
[48] Casson (1980b):28.

personally ignorant of the terrain or, more likely, sought to avoid the main caravan routes to conceal them from the Romans. That Syllaeus avoided the main caravan routes to prevent confrontation with tribes controlling the routes is unlikely; all tribes in the region would have known in a matter of days of Gallus' large expedition no matter what route it took. The return trip of 60 days to the Nabataean port of Egra indicates that a faster route was used, perhaps the one Pliny (*NH* 12.32.64) later mentions between Thomna and Gaza.

Scholars have found no particular reason for Herod's sending Jewish troops on the expedition. S. Jameson's explanation that Herod was simply showing his thanks for the shipment of wheat sent to relieve a famine in Judaea (Josephus, *AJ* 15.305-307) is not convincing.[49] Herod need not have sent 500 troops on a campaign hundreds of miles from home as a gesture of thanks for the Egyptian grain shipment. A passage in Epictetus (*Discourse* 1.10.10) shows that it was not uncommon for Egypt to send grain to other areas of the Near East in time of need. In fact, there was a grain shipment to Judaea from Alexandria, in *c*. A.D. 45 to relieve a famine. Sometimes, as an Antonine or early third century inscription from Ephesus demonstrates, a city in need had to request imperial permission for shipments of Egyptian grain.[50] However, it would be neither expected nor required that recipients of Egyptian grain shower Rome with favors of the magnitude Herod demonstrated.

Herod, and Obodas III, sent troops for another reason. I suggest that the potential for political gain may have been a more compelling inducement. If the expedition were successful the clients could claim a share of the rewards; if it failed, Herod and Obodas stood to lose at most only the troops they had contributed. In either case both monarchs could point out that they had faithfully stood by their Roman ally.

There have been several attempts to identify some of the place names mentioned in Strabo's account of the Gallus expedition,[51] but these studies are, for the most part, inconclusive. El Higra, Athrula, Negrani and Marsiaba have been identified with some certainty; but the locations of others are in doubt.[52]

The examples of Leuke Kome and Athrula point up the difficulty of locating ancient sites in South Arabia. The *Periplus Maris Erythraei* (19) says that Leuke Kome was opposite Berenice on the east coast of the Red Sea—somewhere on the northwest coast of Saudi Arabia. However, the precise location of Leuke Kome—an important port in the early Roman period in the Erythraean Sea

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[49] Jameson (1968):77-78.

[50] For Judaea see Josephus, *AJ* 20.51; 20.101; see G. Rickman (1980):70. For Ephesus see Wörrle (1971):325-340.

[51] H. von Wissman (1976):308-544; J. Pirenne (1961b):93ff; F. Altheim and R. Stiehl (1965):49ff; G. W. Bowersock (1983):148-153.

[52] B. S. J. Isserlin (1979):2-3; see also A. F. L. Beeston (1979b):7-12. Beeston also questions how far the Gallus expedition penetrated into South Arabia.

trade[53]—has, until now, not been established by archaeological excavation. R. F. Burton believed that he had located the site in the northern Hejaz, where he found the remains of a Nabataean temple.[54] G.W.B. Huntingford tentatively identified Yanbu' al-bahr as the site of Leuke Kome.[55] However, a recent, sketchy survey of the Yanbu' al-bahr region revealed little evidence for Nabataean-Roman occupation.[56] An extensive survey of the region of Al-Wadjh, one of the places frequently mentioned as a possible location for Leuke Kome, revealed no Nabataean or Roman pottery,[57] hence little evidence for an important Nabataean-Roman settlement. Furthermore, both of these sites seem fairly far south, remote from the known areas of Nabataean occupation and Roman activity to the north, places such as Hegra, Qurayya, Ruwaffa and Al-Bad'.[58]

Recently Sir Laurence Kirwan, in a paper given at the Second International Symposium on Studies in the History of Arabia in Riyadh in 1979, argued that Leuke Kome must have been a spacious harbor to provide anchorage for Gallus' large fleet and that it must have been located on a wide, fertile stretch of coast to provide for the encampment and victualling of 10,000 men for the better part of a year.[59] Kirwan suggested that the area of 'Aynunah, near the southern entrance of the Gulf of Aqaba, was the best location for Leuke Kome.[60] Strabo implies (16.4.23) that the area of Leuke Kome provided a good anchorage, wide plain and convenient caravan route to Petra. The archaeological evidence brought to light in a recent survey of northwestern Saudi Arabia suggests that Kirwan's observations are correct; the region of 'Aynunah-Khuraybah is the most likely location for Leuke Kome. The area in question is just south of the important Nabataean-Roman center of Al-Bad' en route to Petra, in an area of known Nabataean-Roman commercial interest. The island of Iotabe, later an important Roman/Byzantine customs station and perhaps successor—at a date yet to be determined—to Leuke Kome in that capacity (*Periplus* 19) lay just off the coast to the west.[61] 'Aynunah has a natural, protected harbor and ceramic evidence suggests Nabataean-Roman activity in the first century B.C. and first

[53] *Periplus Maris Erythraei* 19; Strabo 16.4.23-24.

[54] Burton (1879):221-233.

[55] Huntingford (1980):100.

[56] M. L. Ingraham, *et al.* (1981):78.

[57] Ingraham, *et al.* (1981):78.

[58] For a discussion of Al-Bad' see M. Sartre (1982):25; see also P. J. Parr, *et al.* (1971):30-35; for Hegra, Parr, *et al.* (1971):23-26; for Qurayya and Ruwaffa see P. J. Parr, *et al.* (1968-1969):215-241.

[59] Kirwan (1979):1.

[60] Kirwan (1979):5, 7-8; for other possible locations of Leuke Kome see K. Ziegler and W. Sontheimer (1969): col. 595 *s.v.* "Leuke Kome," and N. Groom (1981):208, 261, n. 52.

[61] Procopius, *History of the Wars, the Persian War* 1.19.3-4; Sartre (1982):154; for a detailed discussion of Iotabe see F. M. Abel (1938):510-538.

century A.D.,[62] the very period that the sources indicate commercial transactions at Leuke Kome. ‘Aynunah would have been most easily reached, due to the winds (see above), from Egypt by a large expedition sailing from Cleopatris.

Another statement of Strabo suggests that Leuke Kome was further north than Yanbu’ al-bahr or Al-Wadjh. The Nabataean port of Egra—not to be confused with the inland city of Hegra—was an 11 day sail from Myos Hormos according to Strabo (16.4.24); the normal sailing time between Leuke Kome and Myos Hormos was 2 or 3 days.[63] We must, therefore, conclude that Egra was south of Leuke Kome. It we accept the proposed location of Leuke Kome in the area of ‘Aynunah, this would place Egra further down the coast at approximately the same parallel as Berenice. This was either the southernmost limit of the Nabataean kingdom or more likely the southern limit of its sphere of influence. It was only logical that Aelius Gallus embark his troops for the return voyage to Egypt from the nearest friendly Arabian port. Alternatively, if Leuke Kome were located in the areas of Yanbu’ al-bahr or Al-Wadjh and Egra was south of Leuke Kome, this would place Egra much further south in the Arabian peninsula than Nabataean political power is now known to have extended.

A recently discovered bilingual inscription from Barākish, North Yemen attests the presence of the Roman army and obliquely confirms the name of the site of Athrula.[64] The Latin-Greek bilingual inscription, which may be either dedicatory or funerary, mentions Publi(u)s Cornelius, a cavalryman. The name of his unit is not preserved. The ancient Southern Arabian name for Barākish was YTL and most scholars believe that the name Athrula is a Greek transliteration for YTL.[65] Strabo (16.4.24) tells us that Gallus stationed troops at Athrula and Gallus’ is the only attested Roman penetration this deep into Arabia.[66] It, therefore, seems, to quote G.W. Bowersock, that “the seizure of the city by the troops of Aelius Gallus and the imposition of a garrison there provide the only reasonable historical context for the new inscription.”[67] The inscription also adds, indirectly, to identifying the ancient name of Barākish—Athrula—a stopping point of the Gallus expedition. The cases of Athrula and, possibly, Leuke Kome demonstrate that continued systematic archaeological surveying and excavation in Saudi Arabia and Yemen may yet pinpoint other place names mentioned by the ancient sources.

Strabo believes that Syllaeus deliberately sabotaged the expedition from the outset. However, few modern scholars accept Strabo’s assertion of Syllaeus’ duplicity. Most scholars believe that Strabo was merely reproducing Gallus’

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[62] Ingraham, *et al.* (1981):76-77.
[63] Kirwan (1979):2.
[64] *SEG* XXVII.1005; P.M. Costa (1977):69-72.
[65] Bowersock (1983):151-152.
[66] Dio Cassius 53.29.8.
[67] Bowersock (1983):152.

excuse for the failure of the expedition in using Syllaeus as a scapegoat.[68] That Syllaeus was not immediately brought up on charges of treason, and in fact survived as vizier to the Nabataean throne until his execution twenty years later on charges of murder,[69] suggest that his role in the campaign was honorable. S. Jameson suggests that Gallus' incompetence led to the failure of the expedition and that his rapid retreat from Marsiaba after a six day siege was due to his recall by Augustus and not to lack of water.[70] However, we should accept Strabo's reason—*viz.* lack of water—for Gallus' retreat from Marsiaba. As was usual for ancient armies on campaign, Gallus' expedition relied completely upon the food and water resources of the areas through which it passed or upon areas immediately to its rear. It was only logical that the South Arabians tried to slow Gallus' advance by denying the Romans—through destruction or poisoning—the supplies they planned to obtain on their line of march.[71] The subsequent dearth of food and water became so intense that Gallus was, indeed, forced to retreat.

Most modern scholars have accepted Strabo's statement that the expedition was a failure,[72] but I believe that Strabo's own account suggests otherwise. Very few men were lost in battle and several cities were easily taken. Although there was no long term Roman occupation of South Arabia or evident reduction of the area to client status, the invasion of Gallus must have had a psychological impact upon the South Arabians. Gallus' campaign awakened the South Arabians to the reality that Rome could strike at them with some success. Indeed, Augustus viewed the expedition as a success (*Res Gestae* 5.26), perhaps more in terms of the political and diplomatic consequences than in military results. The campaign established for the first time direct contact between the Roman empire and South Arabia and may have resulted in the first diplomatic exchanges between the two regions. Moreover, it demonstrated that Rome had replaced the Nabataeans and the Ptolemies as the major power at the northern end of the Red Sea.

The *Periplus Maris Erythraei* (23) says that Charibael, king of the Himyarites and Sabaeans, sent embassies and gifts to the Roman emperors. However, we are not certain which Charibael—there were several South Arabian monarchs bearing this name[73]—the *Periplus* refers to. The purpose of these embassies and the emperors to whom they were sent are also unknown. Perhaps the *Periplus*

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[68] Bowersock (1983):47-48 and note 10.

[69] *CAH* 10: 252; Josephus, *AJ* 16.351-353.

[70] Jameson (1968):76-77.

[71] For epigraphic evidence attesting the destruction of enemy wells, food supplies and the devastation of land used for agricultural purposes during raids or in wartime in ancient South Arabia see A. F. L. Beeston (1976b):36, 40, 48, 51, 54.

[72] Jameson (1968):71, 81; Kortenbeutel (1931):70; Sarasin (1930):17; E. Kornemann (1921):70; W. Schmitthenner (1979):104.

[73] M. Rodinson (1974-1975):233ff, 237, 238.

(23) refers to a Charibael whose embassies were ongoing communiqués between Rome and South Arabia after Gallus' expedition of 26/25 B.C. Local rulers in southern Arabia certainly would have wanted to stay on good terms with Rome to prevent any future military adventures into their territory. Economic considerations may also have prompted embassies to Rome. The expanded Erythraean Sea commerce referred to by Strabo (2.5.12; 17.1.13) seems to have been strictly regulated by various South Arabian states. The *Periplus* (29; 32), Strabo (16.4.19) and Pliny (*NH* 12.30.54) indicate the existence of strict controls by various South Arabian states, and archaeological and epigraphic evidence[74]—including the contents of the Qatabanian market decree[75]—and a Minaean market code,[76] support this belief. Such careful regulation suggests that the Erythraean Sea trade was an important source of income for the South Arabian governments.

A. F. L. Beeston argues that one South Arabian monarch, whom he dates to the late first century B.C. and whom he identifies as Yaṣduq'il Fari' Sharaḥ'at, king of Awsan, actually undertook two military campaigns to ensure that lucrative trade with the Mediterranean continued.[77] Beeston believes that this monarch may have been the author of a Greek inscription on a marble throne from Adulis, an Axumite port on the African Red Sea coast.[78] The inscription on the throne, along with a stele inscribed in Greek recording the Egyptian monarch Ptolemy III (246-222 B.C.) which stood behind the throne, are no longer extant. Their existence is recorded in Cosmas Indicopleustes' *Christian Topography* of the sixth century A.D.[79]

Unfortunately, Beeston's association of Yaṣduq'il Fari' Sharaḥ'at with the Adulis throne inscription is very speculative. If the author was a South Arabian monarch why did he record his military exploits in Greek, a language which most in his realm probably could not read? Aśoka, the Mauryan emperor, recorded inscriptions in his native India in both Greek and his own dialect. Greek seems to have been written and spoken at least among some of the upper classes in "Ethiopia" and there is at least one extant inscription in Greek dedicated by South Arabs.[80] However, I know of no parallels for a South Arabian monarch leaving a Greek inscription. Furthermore, as Beeston himself admits, the chronology of Yaṣduq'il's reign is insecurely established.[81] Cosmas closely

[74] D. B. Doe (1971):215 and plates 112-113 and D. B. Doe (1979):40-44. J. Pirenne (1975): 81-96 and A. F. L. Beeston (1976a):39-42 demonstrate that at least one South Arabian state (Hadhramaut) founded colonies in other areas of South Arabia to promote the incense trade.

[75] A. F. L. Beeston (1959):3, 4, 7, 11-16.

[76] A. F. L. Beeston (1978):142-145.

[77] Beeston (1980):452-458.

[78] Beeston (1980):452-458; on the location of Adulis see L. Casson (1984): 199-210.

[79] Beeston (1980):452; *OGIS* 1.54 records Cosmas' version of the stele inscription.

[80] Ch. Clermont-Ganneau (1908):546-560; for Ethiopia see Snowden (1983):93.

[81] Beeston (1980)-452-458.

associates the stele inscribed with the name of Ptolemy III with the throne. Ptolemy II, Ptolemy III and Ptolemy IV are known to have been active in promoting Egyptian trade in the Red Sea and founded over a dozen ports on the African Red Sea coast as far south as the Bab el-Mandeb.[82] Thus, it is more likely that the Greek inscription on the Adulis throne records Ptolemaic activities in the region rather than those of a South Arabian monarch. Intriguing as Beeston's argument is, these facts render his identification of the author of the Adulis throne inscription questionable. Nevertheless, Charibael and other South Arabian monarchs undoubtedly took steps to insure that trade with the Mediterranean world continued with the blessings, if not the encouragement of the Roman government.

The Roman annexation of Egypt and the attack on South Arabia may also have affected the attitudes of other foreign states towards Rome. By the 60s B.C. Rome directly controlled Syria and had reduced Judaea and Nabataea to the status of clients. Yet the *Res Gestae* (5.31) says that Indian kings first sent embassies to Rome only in the reign of Augustus. It would seem, then, that the annexation of Egypt brought Rome for the first time into direct contact with India and facilitated the development of maritime links with the Indian subcontinent.

The number of Indian embassies that Augustus received is uncertain because the ancient references are so vague; modern estimates vary from one to three or four.[83] The Indian embassies to Augustus possibly included one at Tarraco, Spain in 26/25 B.C., one at Samos in 20 B.C., and possibly, based on the first public viewing of a tiger—an Indian species—in Rome, one in 11 B.C.[84] It is futile to try to determine which Indian states sent these embassies since Roman sources in the Augustan period are so uncertain about the Indian state system and their geographical knowledge of India was so poor.[85] Moreover, Indian sources are silent about diplomatic contacts with Rome.

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[82] Strabo 16.4.7ff; Pliny, *NH* 6.34.170-175; Kortenbeutel (1931):26; M. I. Rostovtzeff, *SEHHW*:384; M. I. Rostovtzeff (1932b):742; H. H. Scullard (1974):129, fig. 13; F. Oertel (1964):43; see also *Periplus Maris Erythraei* 3 and *OGIS* I.54; I.82; I.86 on Ptolemaic elephant hunts.

[83] For one embassy see O. de Beauvoir Priaulx (1860):313; on three or four embassies see U. Kahrstedt (1921):8; J. Pirenne (1970):114; R. M. Cimino and F. Scialpi (1974):8-9; M. P. Charlesworth (1951):140-141.

[84] For the embassy to Spain see Orosius 6.21.19f; Jerome, *Chron.* 188; Kortenbeutel (1931): 57; Kornemann (1921):56-58. For the embassy at Samos see Dio Cassius 54.9.8f; Strabo 15.1.4; 15.1.73; Florus' statement (2.34.62) that the Seres (Chinese) sent ambassadors to Augustus seems dubious. Seres may be an error for Cheres, a people of South India. None of these sources specifically mentions the island of Samos; see also Kortenbeutel (1931):57; for a tiger in Rome see Pliny, *NH* 8.25.65; Suetonius, *Augustus* 43.4.

[85] Kahrstedt (1921):8; Diodorus Siculus 2.35-42; Strabo 15.1.11-12; Pliny, *NH* 6.21.56-57; for further confusion among the classical authors on the size and location of India see J. Filliozat (1949):7.

The arrival of Indian embassies received a great deal of attention in contemporary Roman literature. On the other hand, there is no evidence for any "official" Roman embassy to India, and in fact there is no reason to believe that one was sent. It is possible, of course, that the Romans sent "official" embassies to India, but that these were simply not recorded in the literature of the period, which depicted Augustus and Rome as too powerful to deign to recognize the political claims of the Indian states whose ambassadors arrived in the Roman world. In fact the evidence for Indian embassies to Augustus derives from sources which portrayed Rome as superior to all of its neighbors. Perhaps the Indian "embassies" were in no way official, but simply Indian or Greek entrepreneurs posing as diplomats to promote commerce.

In any event, it is safe to infer that the arrival of Indian embassies in the Roman world was the direct result of the Roman annexation of Egypt and the attack on South Arabia.[86] Rome, a newcomer to the Erythraean Sea region, had to establish itself quickly as a power to be reckoned with. These accounts of Indian and South Arabian embassies to Rome suggest that the Indian and South Arabian monarchs recognized Rome as an Erythraean Sea power which could indirectly—in the case of India—or directly—as demonstrated by the Gallus expedition to South Arabia—alter the political and economic *status quo* of the area.

### *The Campaign of Gaius Caesar*

Another military campaign in the Augustan period may reveal something of Roman policy in the Erythra Thalassa. An inscription from Pisa (*ILS* 140=*CIL* XI, 1421, lines 7ff) refers to a campaign of C. Caesar:

> ...who [was] waging war beyond the most remote boundaries of the Roman people...[87]

Some have associated this campaign with the putative destruction of Aden, in South Arabia, recorded in the *Periplus* (26):

> Now not long before our own time Caesar subdued the place.[88]

However, it is likely that the reading *Kaisar* in the *Periplus* is a corruption,

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[86] Schmitthenner (1979):104-105.

[87] . . . C. Caesarem... quem ultra finis extremas populi Romani bellum gerens. . .

[88] *PME* 26: Νῦν δὲ οὐ πρὸ πολλοῦ τῶν ἡμετέρων χρόνων Καῖσαρ αὐτὴν κατεστρέψατο. Kortenbeutel (1931):55, 79; T. Mommsen (1909):293; M. P. Charlesworth (1928):98-99; M. Cary (1956):133; M. Cary and E. H. Warmington (1963):95 and 265 n. 49; however, K. Wellesley (1954):401 and Schwartz (1960):24 discount Gaius' attack on Aden; see also Rodinson (1974-1975):233ff.

probably for Charibael, Elisar or Eleazus, common names of South Arabian monarchs.[89] Pliny indicates (*NH* 6.31.141) that the campaign was:

> ...against the Parthians and the Arabs...[90]

but makes clear (*NH* 6.32.160) that this expedition was not directed against Arabia Felix:

> Aelius Gallus, from the Equestrian order, till now is the only one who bore arms against this land; for C. Caesar, son of Augustus, only had a glimpse at Arabia.[91]

The term Arabia has, as we have seen, wide geographic connotations in the Roman period and could be applied to a number of regions south of the Taurus Mountains, west of the Tigris-Euphrates and north of and including Arabia Felix.[92] Gaius' campaign of A.D. 1,[93] was directed, in part, against the Arabs, but the location of these peoples is uncertain. Pliny seems to place the campaign in the Sinus Arabicus (*NH* 2.67.168):

> In which figureheads of ships from Spanish wrecks were identified when Augustus' son C. Caesar was campaigning there.[94]

If the Sinus Arabicus is the present Gulf of Aqaba, then the most likely identification of Pliny's "Arabia" is Arabia Nabataea, the kingdom of Nabataea.[95] One scholar, in fact, has suggested that Gaius' campaign was launched inside the kingdom of Nabataea against nomadic invaders driving north from the Arabian peninsula. This hypothesis rests on a rather shaky premise—*viz.* the belief that the existence of a *limes* system in southern Palestine in Herodian and Flavian times is more reasonably explained as protection against nomads than against the Nabataeans. However, the very existence of such a *limes* network

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[89] *PME* 23 for Charibael and 27 for Eleazus/Elisar; W. H. Schoff (1912):115-116 discusses the corrupt manuscript as does Huntingford (1980):8-10. Schoff believes that "Charibael" should be read, Huntingford, "Elisar." H. G. Rawlinson (1916):112-113 believes that Eleazar or Charibael sacked Aden; J. Kennedy (1916):832, 834 supports the idea of the Roman destruction of Aden, but dates it to Claudius (A.D. 41-54) or Nero (A.D. 54-68). See also E. H. Bunbury (1959): II, 456, 478; M. I. Rostovtzeff (1907-1908):308-309; M. P. Charlesworth (1928):98-99; A. Dihle (1965):23; P. M. Fraser (1972):181; Rodinson (1974-1975):233ff, 237-238 notes that there were several South Arabian monarchs named Charibael (KRB'L) and Eleazus/Elisar ('L'Z or 'L'D); Strabo 16.4.24 notes a South Arabian monarch named Ἰλάσαρος and Ptolemy (*Geog*. 6.7.7) one named Ἐλίσαρος.

[90] . . . ad Parthicas Arabicasque . . . .

[91] Romana arma solus in eam terram adhuc intulit Aelius Gallus ex equestri ordine; nam C. Caesar Augusti filius prospexit tantum Arabiam.
Dio Cassius 53.29.8; 55.10.18ff and Velleius Paterculus 2.101f. give less detailed accounts of the campaign.

[92] On the vagueness of the term "Arabia" in the ancient sources see Chapter 2; Bowersock (1983):1.

[93] F. E. Romer (1978):187-202; F. E. Romer (1979):199-214; T. D. Barnes (1974):21-26.

[94] in quo res gerente C. Caesare Augusti filio signa navium ex Hispaniensibus naufragiis feruntur agnita.

[95] Bowersock (1971):227.

in southern Palestine in the first century is in doubt. Furthermore there is no indication of a threat by nomadic Arabs at that time.[96] Under Aretas IV (9 B.C.–A.D. 40) Nabataea was at its zenith; it was internally tranquil and was becoming increasingly sedentarized in the course of the first century.

Had a "nomadic" invasion taken place, the Nabataean military presumably would have dealt with it. Nomadic migrations were age old annual phenomena and probably would not, in themselves, upset the settled patterns of life in adjacent regions. I suggest that there were other reasons for Gaius' expedition.

The Arabs and Jews were sporadically at odds and troubles were so severe in Judaea in 4 B.C. following Herod's death that Varus, the governor of Syria (Josephus, *BJ* 2.39ff), had to send in forces. In fact the troubles between the Arabs and the Jews after Herod's death, taken together with the expedition of Gaius Caesar mentioned above, have led G.W. Bowersock to suggest that Rome actually annexed Nabataea for a brief period between 3-1 B.C. Bowersock points out that Aretas IV, king of Nabataea between 9 B.C.–A.D. 40, produced an abundant coinage except in 3-1 B.C. Does this lack of issues in 3-1 B.C. indicate that the monarch did not mint in those years, or is this dearth due to the accident of find? If Aretas IV did not mint in 3-1 B.C. this fact may indicate that Aretas was not in control of his kingdom at tthat ime. We have coins of Aretas from A.D. 1, the very year that Gaius' expedition took place. Bowersock suggests that it was in A.D. 1 that Gaius Caesar reestablished Aretas on his throne after a period of temporary Roman rule the exact purpose of which remains a mystery.[97] Banditry was also a persistent and severe problem in Judaea especially in its border areas (Josephus, *AJ* 17.285ff). The outlaws involved were often not just robbers, but terrorists conducting guerilla warfare against pro-Roman governments in the region of Judaea. Adverse social or economic conditions might also lead to upheavals directed at local authorities.[98]

Strabo says (4.6.6) that Augustus was always interested in the suppression of banditry, and according to Josephus this was a major reason prompting him to transfer the rule of Batanaea, Trachonitis and Auranitis to Herod in 24 B.C.[99] Josephus also reports (*AJ* 16.271ff) that Herod forced the population of Trachonitis to turn from banditry to a settled, agricultural way of life. By the time the country passed to Roman rule the people were settled in villages and tribal organization was breaking down.[100] Such peaceful, settled conditions favored Romanization/Hellenization of the region.

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[96] Bowersock (1983):10; Bowersock (1971):227-228; see also B. Isaac (1981); Cf. M. Gichon (1980):843-864.

[97] Bowersock (1983):54-57.

[98] Smallwood (1976):44; for banditry in Judaea see R. MacMullen (1966):263-264; R. A. Horsley (1981):409-432; B. Isaac (1981); D. Graf and M. O'Connor (1977):63-64 and n. 56 for the later centuries; Starr (1982):94-95; 116-123.

[99] Josephus, *AJ* 15.343ff; *BJ* 1.398.

[100] A. H. M. Jones (1931b):269 and nn. 7-15.

I suggest that Gaius was sent either to encourage the Nabataeans to adopt a similar sedentarization policy as a weapon against banditry—and thereby begin a slow Romanization/Hellenization process among the nomadic peoples of that client state—or to show Augustus' concern over the continued activity of bandits in a region that was supposedly settled. Persisting border conflicts in the regions of Nabataea and Judaea may also have prompted the expedition. Gaius may also have arrived in the region to deal with the troublesome minister Syllaeus who had so recently intrigued in Rome to secure his position in the Nabataean state. Sending Gaius signalled Augustus' keen personal interest in the region and at the same time gave the young man practical experience in the field. Augustus' message to local rulers was: keep the peace or risk Roman intervention. The expedition, mainly political in purpose, also "showed" the flag in the area.

Periodic Roman military intervention in Judaea and interest in Nabataea prior to their annexation reveals how important the area was to the Romans. The reigns of Herod of Judaea (died 4 B.C.) and Aretas IV of Nabataea were periods of great economic prosperity for the region;[101] Rome, too, derived wealth from the area in the form of tribute and *portoria* from caravans involved in the Erythraean Sea commerce. Rome could not tolerate disorder in the area. The client status of Judaea and Nabataea in A.D. 1 allowed Rome the maximum political and economic benefits of stability on its southeast frontier and guaranteed income (tribute and *portoria*) without the expense of permanent Roman military occupation and administration of these regions.

Given Augustus' expansionist tendencies elsewhere on the periphery of the empire, why was Augustus seemingly reluctant to annex the regions of Judaea and Nabataea? We have noted Bowersock's belief in a period of possible temporary Roman rule in 3-1 B.C. However, an earlier opportunity to annex Nabataea occurred in *c.* 9 B.C. At that time Aretas IV succeeded to the Nabataean throne, but did so without taking the customary measure of requesting Rome's permission to do so. Augustus was quite annoyed with this breach of protocol according to Josephus (*AJ* 16.294-299) and was also displeased with the intrigues of Syllaeus, the vizier to the Nabataean throne (*AJ* 16.335-355). Josephus says (*AJ* 16.355) that Augustus considered handing over the kingdom of Nabataea to Herod, but felt that the latter's advanced age would prevent him from successfully ruling a large new territory which had been repeatedly at odds with his own kingdom. The first princeps decided to accept the *fait accompli* as preferable to any available alternative—which seems not to have included Roman annexation—but he undoubtedly issued a stern warning to the newly installed Nabataean monarch.

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101 H. W. Hoehner (1972):142-143 and Y. Meshorer (1975):41ff for prosperity in Nabataea under Aretas IV.

Popular unrest against Archelaus, ruler of the area, and a request for Roman intervention[102] led Augustus reluctantly to annex Judaea, Samaria and Idumaea as the province of Judaea in A.D. 6. In neither Judaea nor Nabataea does it seem that economic motives prompted annexation; on the other hand, economic considerations—*viz.* the costs of conquering, garrisoning, and administering—may have deterred Roman acquisition of new territory. Rome cannot have ignored totally the economic wealth of its neighbors, as Strabo's comments on Britain (see below) and Herodian's on Caracalla's intentions vis-à-vis Parthia (4.10.2-4)[103] indicate, but most Roman annexations of new regions, with the obvious exception of the Arabia Felix expedition, had purely political or military motives behind them. The security of the empire was of paramount concern.

Augustus' reluctance to annex Britain illustrates the Roman application of "cost benefit" when considering the conquest of new areas (Strabo 2.5.8):

> For although the Romans could have held Britain, they thought little about the idea. They saw that there was nothing at all to fear from them [the Britons] for they are not strong enough to cross [the channel] to attack us. Also there was no advantage to be gained by seizing their country.[104]

and (Strabo 4.5.3):

> Now, however, some of the leaders there, having obtained the friendship of Caesar Augustus by sending embassies and by paying court to him, not only made offerings in the Capitolium, but also succeeded in making the entire island virtually Roman property. In addition, they submit so readily to heavy tolls, both on exports from there to Celtic lands and on the imports from Celtic lands (these are ivory chains and necklaces, and red amber gems and glass vessels and other petty wares of that sort), that there is no need to garrison the island; for at least one body of soldiers and some cavalry would be required to carry off tribute

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[102] Smallwood (1976):117-119.

[103] τὰ δὲ γράμματα ἔλεγεν ὅτι δὴ βούλεται ἀγαγέσθαι αὐτοῦ τὴν θυγατέρα πρὸς γάμον· ἁρμόζειν δὲ αὐτῷ, βασιλεῖ τε καὶ βασιλέως υἱῷ, μὴ ἰδιώτου τινὸς καὶ εὐτελοῦς γαμβρὸν γενέσθαι, ἀγαγέσθαι δὲ βασιλίδα τε καὶ μεγάλου βασιλέως θυγατέρα, δύο δὲ ταύτας ἀρχὰς εἶναι μεγίστας, τήν τε 'Ρωμαίων καὶ τὴν Παρθυαίων· ἃς συναχθείσας κατ' ἐπιγαμίαν, μηκέτι ποταμῷ διωρισμένας, μίαν ποιήσειν ἀρχὴν ἀνανταγώνιστον· τὰ γὰρ λοιπὰ ἔθνη βάρβαρα, [ὅσα νῦν ⟨οὔπω⟩ ὑπὸ ταῖς τούτων βασιλείαις,] εὐάλωτα ἔσεσθαι αὐτοῖς, κατὰ ἔθνη καὶ κατὰ συστήματα ἀρχόμενα. εἶναι δὲ 'Ρωμαίοις μέν πεζὸν στρατὸν καὶ τὴν διὰ δοράτων συστάδην μάχην ἀνανταγώνιστον, Παρθυαίοις δὲ ἵππον τε πολλὴν καὶ τὴν διὰ τόξων εὔστοχον ἐμπειρίαν. ταῦτα δὴ συνελθόντα, πάντων τε οἷς πόλεμος κατορθοῦται συμπνεόντων, 'ρᾳδίως αὐτοὺς ὑφ' ἑνί διαδήματι βασιλεύσειν πάσης οἰκουμένης. τά τε παρ' ἐκείνοις φυόμενα ἀρώματα ἢ θαυμαζόμενα ὑφάσματα καὶ ⟨τὰ⟩ παρὰ 'Ρωμαίοις μεταλλευόμενα ἢ διὰ τέχνην ἐπαινούμενα μηκέτι μόλις καὶ σπανίζοντα λανθάνοντά τε δι' ἐμπόρων κομισθήσεσθαι, μιᾶς δὲ γῆς οὔσης καὶ μιᾶς ἐξουσίας κοινὴν καὶ ἀκώλυτον ἀμφοτέροις τὴν ἀπόλαυσιν ἔσεσθαι.

[104] καὶ γὰρ τὴν Βρεττανικὴν ἔχειν δυνάμενοι 'Ρωμαῖοι κατεφρόνησαν, ὁρῶντες ὅτι οὔτε φόβος ἐξ αὐτῶν οὐδὲ εἷς ἐστιν (οὐ γὰρ ἰσχύουσι τοσοῦτον, ὥστ' ἐπιδιαβαινειν ἡμῖν), οὔτ' ὠφέλεια τοσαύτη τις, εἰ κατάσχοιεν.

> from them and the expense of the army would balance the tribute. In fact, the tolls have to be lessened if tribute is imposed and, at the same time dangers would be encountered if force is applied.[105]

In the case of Judaea, Augustus found the problems of the region better handled by local dynasts. Herod was a reliable man and administered the region as well as could be expected. A convenient patron-client relationship existed between Augustus and Herod and annexation of portions of Herod's former realm were undertaken only reluctantly when his successor sons proved incompetent or died without heirs.

Nor were there compelling political, military or economic reasons to annex Nabataea. Except for sporadic border disputes with Judaea and occasional brigandage in the region, Nabataea seems to have been relatively peaceful, prosperous and loyal. The Nabataeans were experienced in dealing with the desert tribes and adept at keeping open the caravan routes to South Arabia and Gerrha on the Persian Gulf. While the caravans passed through and enriched Nabataea, to reach the Mediterranean ports of Gaza, Anthedon and Caesarea Maritima they had to cross Roman borders and pay Roman *portoria*. The Romans stood to gain little economically by the conquest of Nabataea since the *portoria* rates they would levy there probably would have been no greater than those they collected at the border between the empire and Nabataea. In addition, annexation imposed on the Romans the unwelcome expense of governing a vast territory.

*Tiberius (A.D. 14-37)*

As is well known, Tiberius took no unnecessary risks in foreign expansion and even dissuaded on-going efforts by Germanicus to transform the punitive expedition against Germany into a war of annexation.[106] The growth of Rome's commercial activities in the Erythraean Sea region, begun under Augustus, was continued and accelerated by Tiberius. Evidence suggests that it may have been in the reign of Tiberius that Egypt's Red Sea ports were repaired, enlarged and/or constructed. Possibly, too, under Tiberius exploitation of the mineral wealth of the Eastern Desert expanded. Graffiti found along Eastern Desert

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[105] νυνὶ μέντοι τῶν δυναστῶν τινες τῶν αὐτόθι πρεσβεύσεσι καὶ θεραπείαις κατασκευασάμενοι τὴν πρὸς Καίσαρα τὸν Σεβαστὸν φιλίαν, ἀναθήματά τε ἀνέθηκαν ἐν τῷ Καπετωλίῳ καὶ οἰκείαν σχεδόν τι παρεσκεύασαν τοῖς Ῥωμαίοις ὅλην τὴν νῆσον· τέλη τε οὕτως ὑπομένουσι βαρέα τῶν τε εἰσαγομένων εἰς τὴν Κελτικὴν ἐκεῖθεν καὶ τῶν ἐξαγομένων ἐνθένδε (ταῦτα δ' ἐστὶν ἐλεφάντινα ψάλια καὶ περιαυχένια καὶ λιγγούρια καὶ ὑαλᾶ σκεύη καὶ ἄλλος ῥῶπος τοιοῦτος) ὥστε μηδὲν δεῖν φρουρᾶς τῆς νήσου· τοὐλάχιστον μὲν γὰρ ἑνὸς τάγματος χρῄζοι ἂν καὶ ἱππικοῦ τινος, ὥστε καὶ φόρους ἀπάγεσθαι παρ' αὐτῶν, εἰς ἴσον δὲ καθίσταιτ' ἂν τό ἀνάλωμα τῇ στρατιᾷ τοῖς προσφερομένοις χρήμασιν· ἀνάγκη γὰρ μειοῦσθαι τὰ τέλη φόρων ἐπιβαλλομένων, ἅμα δὲ καὶ κινδύνους ἀπαντᾶν τινας, βίας ἐπαγομένης.

[106] Tacitus, *Ann.* 2.5; 2.26.

roads between Coptos and the Red Sea ports, together with literary references to stations on the roads,[107] suggest that Augustus and Tiberius built and garrisoned these routes. The consolidation of the Roman world was important to both rulers; Roman road building in the Eastern Desert of Egypt was merely part of the extensive road construction throughout the empire. Tiberius may have encouraged the creation of mercantile centers along routes leading to the frontiers. We know that Augustus and Tiberius built or enlarged temples at Coptos and that extensive general rebuilding took place at Coptos under the Julio-Claudians.[108] The repairs and construction carried out during the reign of Tiberius at Coptos and at the Egyptian Red Sea ports were, no doubt, part of this plan for economic development stimulated by the expansion of the Erythraean Sea trade.

The earliest proof of direct imperial involvement in and profit from the Erythraean Sea trade comes from the reign of Tiberius. A slave of Tiberius operated a business for his imperial master at Berenice for at least two and one-half years.[109] Although there is no evidence for the involvement of slaves or freedmen of Augustus, Claudius or the post-Flavian emperors in this commerce, there is reason to believe that this trend continued under later emperors. Caligula, Nero and one or more of the Flavians[110] had slaves or freedmen with business interests at the Egyptian Red Sea ports. It was also under Tiberius that the earliest Roman military presence is recorded at Palmyra and it may have been during his reign that Palmyra was incorporated, at least temporarily, into the Roman empire.[111]

It is difficult to determine, however, when imperial involvement in trade and commerce, through slave and freedmen *clientelae*, expanded from interest in personal gain to concern for the economic improvement of the state. The two motives are not mutually exclusive, but probably went hand-in-hand. We do not know which of the Roman treasuries—the *fiscus*, the *aerarium* or the emperor's personal *patrimonium*[112]—received revenues generated by the Erythraean Sea commerce. It is clear, however, that the distinction between personal and state funds became less important during the first century. As the management of all three treasuries was ultimately in the hands of the emperor, it is

[107] See also M. P. Speidel (1977a): 511-515.

[108] G. Alföldy (1965):837; A. J. Reinach (1911b):34, 40-41, 59; A. J. Reinach (1911a):48, 59.

[109] *O. Petr.* nos. 237, 238, 239, 242.

[110] For Caligula see *O. Petr.* no. 258; for Nero see *O. Petr.* no. 290; for the Flavians see R. S. Bagnall, *et al.* (1979):243-244 for amphorae plugs from Quseir mentioning imperial freedmen, one of which seems to be Flavian.

[111] H. Seyrig (1941b):170-172

[112] On the different Roman treasuries see C. H. V. Sutherland (1945):151-170; T. R. Holmes (1931):177-178; F. Millar (1963):29-42; F. Millar (1964a):33-40; T. Frank (1933):143-148; P. A. Brunt (1966):75-91; H. Mattingly (1910): 10-26; A. H. M. Jones (1950):22-29; F. Millar (1977):158ff, 188-190, 197-200 and on imperial treasuries in general, 144-153, 621-630.

clear that he was the principal beneficiary of all tax revenues generated by commerce.

One incident towards the end of Tiberius' reign may shed additional light on his concerns and aspirations in the region of the Erythra Thalassa. Josephus (*AJ* 18.109ff) recounts a quarrel between Herod Antipas, the Tetrarch of Galilee and Peraea,[113] and Aretas IV of Nabataea, in which the former's army was destroyed. Tiberius was reportedly furious with Aretas and instructed Vitellius, governor of Syria:

> ...to declare war and either bring Aretas to him [Tiberius] in chains if captured alive, or, if he [Aretas] should be killed, to send him [Tiberius] his [Aretas'] head...[114]

Vitellius prepared to invade Nabataea with two legions and auxiliary light infantry and cavalry (Josephus, *AJ* 18.120). However, Vitellius, learning of Tiberius' death while in Jerusalem, recalled his army for he was no longer authorized to make war abroad without consent of the new emperor Caligula.[115] Why would Tiberius want to depose Aretas? Did he plan to annex Nabataea?

The proposed expedition of Vitellius against Aretas IV was the only one Tiberius ordered outside imperial frontiers. The army Vitellius assembled—larger than the garrison of Provincia Arabia after A.D. 106—was too formidable to have been merely a punitive force. That Tiberius intended to annex Nabataea may at first glance seem incompatible with his evident disinclination to expand the empire. The annexation of Nabataea, however, would have been consonant with Tiberian policy elsewhere in the empire. In the course of his reign he established a number of new provinces in the East by annexing the client states of Commagene, Cappadocia and Hierapolis-Castabala in A.D. 17.[116] Cappadocia was of prime military importance to the Romans, for whoever possessed the region controlled commercial and military access to Armenia—a frequent area of contention between Rome and Parthia and the invasion route for armies going in either direction—from Asia Minor. The construction of a *limes* on the Cappadocian-Armenian border later in the first century protected western Asia Minor and northern Syria from Parthian attack.[117] In addition to its strategic political and military importance, acquisition of Cappadocia, with its silver mines and royal properties, was so profitable to the Roman

[113] Hoehner (1972):43-51.

[114] Josephus, *AJ* 18.115: ...πόλεμον ἐξενεγκεῖν καὶ ἤτοι ζωὸν ἑλόντα ἀναγαγεῖν δεδεμένον ἢ κτεινόμενου πέμπειν τὴν κεφαλὴν ἐπ' αὐτόν.

[115] Josephus, *AJ* 18.124; see also Hoehner (1972): 254-257; Smallwood (1976):142-144 on this incident.

[116] Alföldy (1965):829; for Commagene see Tacitus, *Ann.* 2.56; for Cappadocia see Suetonius, *Tiberius* 37.4; Tacitus, *Ann.* 2.42; 2.56; Dio Cassius 57.17.7; see E. N. Luttwak (1976): 38 and nn. 96-99.

[117] T. B. Mitford (1977):501-510; J. C. Crow and D. H. French (1980):903-912; T. B. Mitford (1980):913-926.

treasury that Tiberius was able to halve the unpopular 1% sales tax that Augustus had imposed after Actium.[118] Commagene was strategically important to Rome because one of the three crossings of the middle Euphrates leading to Parthia lay within its boundaries. Clearly Tiberius was prepared to annex client states when he believed that direct rule was preferred. However, his immediate successor Caligula reversed Tiberius' annexation policy and restored a number of kingdoms in the East: Commagene, Cilicia Tracheia, Pontus, Lesser Armenia, Ituraea, Abilene, Galilee and Peraea,[119] a situation which endured until the Flavian period.

The maintenance of peace through armed force was not characteristic of Tiberius who, according to Tacitus, was apt to keep the peace *consilio quam vi*.[120] Had Tiberius merely wished to reprimand Aretas he could have sent a message or a smaller force. But Aretas had become the most powerful ruler in the region, and had upset the local balance-of-power by destroying Antipas' army.[121] Consequently, Aretas was a potential—though hardly real—threat to the ports of the Eastern Mediterranean coast, to Syria and to Egypt. This was a sufficient *casus belli* for Tiberius.

Tiberius' tendency to reduce the client state structure in the East together with his refusal to mediate the crisis with Aretas and the dispatch of a large Roman force against Nabataea under the command of the governor of Syria suggest that the expedition was important. By annexing Nabataea the political-military threat posed by Aretas would be eliminated. Annexation would result in direct Roman control of the entire northern end of the Red Sea and the lucrative Erythraean Sea trade which debouched there.

### *Roman Policy in the Erythra Thalassa under Augustus and Tiberius: Perceptions and Realities*

Interpretation of the extant evidence on Augustan-Tiberian policy in the Erythraean Sea must consider the contemporary literary perceptions of Roman policy in the region and what Roman policy in the area actually seems to have been. Evidence for the period 30 B.C.–A.D. 37 derives almost exclusively from the reign of Augustus—viz. the Augustan poets Ovid, Horace, Propertius, Tibullus and the explorers and geographers of the period, Isidore/Dionysus of Charax and Juba of Mauretania. Horace advises Augustus to make war on the Arabs and Sabaeans, says that the Indians already cower before

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[118] Tacitus, *Ann.* 2.42; D. Magie (1950):495, 1355 n. 13; B. Levick (1976):141; J. C. Mann (1974):522; R. L. V. Cagnat (1882):229.

[119] Luttwak (1976):38-39 and n. 97.

[120] *Ann.* 2.26; 2.64; see also Suetonius, *Tiberius* 37.4.

[121] On the importance of a balance of power in the ancient Near East see P. C. Hammond (1973):29.

Rome, and expresses the hope that Augustus will soon celebrate a triumph over China or India.[122] Horace in *Odes* 1.35.30-32 he urges Augustus to conquer the Red Sea *(Oceanum Rubrum)* and Eastern lands. Vergil's poems express similar aspirations. He believes (*Aeneid* 6.792-800) that Augustus will eventually spread Roman rule past the Garamantes (a tribe living in the Libyan Desert) and India and thinks that Egypt, India, Arabia and Saba are terrified of Roman might. Propertius also refers (*Elegies* 2.10.15-18) to India and Arabia trembling before Rome and believes that Rome should conquer the world. There are many oblique references throughout the works of the Augustan authors to the wealth of Erythraean Sea lands and more specific comments on Indian and Arabian wealth—in Horace (*Odes* 2.12.24; 3.24.2; *Epistles* 1.6.6; 1.7.36) and Tibullus (2.2.3-4).

Were the Augustan poets enthusiastic about both past and future Roman expansion in the region of the Erythraean Sea? The frequent references to the conquest of Eastern lands may have been poetic sentiment which revealed the genuine opinions of the authors; alternatively, their writings may have expressed "official" views on Roman imperialism in the East. Possibly, too, these references to military conquest were meant only as flattery for the emperor. If the poets desired these conquests, it was primarily for the military glory and political aggrandizement they would bring Rome; the economic benefits of trade resulting from Roman expansion in the Erythraean Sea are hinted at, and would have naturally followed any conquests in the region, but the poets do not mention commercial considerations as motives for conquest in the first place. The uniform nature of poetic opinion suggests that expansion in the area of the Erythraean Sea was a topic under discussion by governing circles in Rome to which the poets had access. The Erythraean Sea certainly would have been a topic of considerable interest during the early years of Augustus' reign when, as he says in the *Res Gestae* (5.26), he annexed Egypt and sent Roman armies into South Arabia and Ethiopia.

The exploration carried out in the reign of Augustus, either at his request or by private individuals—possibly for commercial motives—also reveals a wider interest in regions outside imperial boundaries. Isidore/Dionysius of Charax surveyed caravan routes down the Euphrates into Parthian territory.[123] Juba of Mauretania (died *c.* A.D. 23), perhaps because of stories related to him by his Egyptian born wife Cleopatra Selene daughter of Marc Antony

[122] *Odes* 1.12.54-65; 1.29ff; 1.35.40; *Carm. Saec.* 55; Horace also warns (*Odes* 3.29.27; 4.15.22) Rome to beware of Chinese plots.

[123] W. H. Schoff (1914):is a translation of and commentary on Isidore, whom Schoff dates to the Augustan period. Cary (1956):133 believes that the evidence on Isidore is too tenuous and ambiguous to date his life and work. Nodelman (1960):97 does not equate Isidore of Charax with the Dionysius mentioned in Pliny, *NH* 6.31.141. He believes that they are two different men. Nodelman (1960):97 and 107 dates Dionysius to the Augustan period and Isidore to the late first century; cf. É. Lamotte (1953):96.

and Cleopatra (Plutarch, *Antony* 87.1), grew interested in and wrote a treatise on the region of the Erythraean Sea. Juba's account, reproduced in part by Pliny,[124] may reveal Augustan interest in the area. Dionysius'/Isidore's explorations and Juba's volumes—dedicated to C. Caesar, grandson and "adopted" son of Augustus—suggest that the first princeps commissioned both men to explore regions in which Gaius was to campaign.[125] Unfortunately these volumes reveal only Roman interest, and nothing of Roman policy, in the region of the Erythraean Sea.

Did Rome actually seek military, political or economic hegemony over regions of the Erythraean Sea under Augustus? Retention of Egypt resulted in the exploitation of the agricultural wealth of the area which Augustus, through his massive repairs of the irrigation works, developed as quickly as possible. Augustus jealously guarded Egypt because of its extreme importance to the capital's food supply; a hungry populace in Rome might topple an emperor who was unable to feed it. Thus Egypt, because of its agricultural wealth, was politically important to the emperor. Taxation of the Erythraean Sea trade passing through Egypt was also an important source of income to the imperial treasury.

The unusual step that Augustus took in attacking Arabia Felix, an area which was neither a political nor a military threat to Rome, must be seen for what Strabo labelled it, a gamble to gain direct control of what the Romans believed to be a fabulously wealthy region. The expedition's qualified success was a demonstration of blatant Roman economic imperialism. No other regions on the periphery of the empire offered so tempting a prize. Stories of the prodigious wealth of South Arabia had circulated for centuries and the Arabs were not considered a serious military obstacle; no such opportunity existed elsewhere on Rome's periphery.

Augustus avoided the annexation of Nabataea—though he may have promoted the Romanization of the region through the expedition of Gaius—and only reluctantly undertook control of Judaea.[126] Neither offered political advantages, military glory or economic wealth sufficient to warrant the cost of controlling these areas. Nor were these regions serious potential military threats to Roman hegemony.

What were the limits of the empire to be in the region of the Erythraean Sea? I doubt that even Augustus himself knew. The first princeps was, above all, pragmatic. He added more territory to the empire than any single leader before or after him: Pannonia, Dalmatia, Raetia, Noricum, Moesia, Thrace, Galatia, Numidia, Egypt. He contemplated expeditions against Britain (Strabo

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[124] *NH* 6.31.141; 6.32.156; 12.31.56; 12.40.80; 33.40.118; 35.22.39; 37.32.108.

[125] R. K. Sherk (1974):539; Warmington (1928):33.

[126] For the instability in Judaea resulting from Herod's death in 4 B.C. see F. Millar (1966):159.

2.5.8; 4.5.3), Parthia and other remote areas and undertook campaigns against Dacia (Dio Cassius 51.23.2ff). If a golden opportunity had presented itself for further Roman expansion in the area of the Erythra Thalassa it seems likely, given Augustus' expansionist tendencies, that he would have acted.[127]

Roman policy in the Erythra Thalassa under Tiberius is more difficult to interpret. Contemporary authors shed little light on Tiberian activity in the area and Rome acquired no new permanent territory in the region at the time. The anti-expansionist policy attributed by some to Tiberius, based as it is upon Augustus' purported advice to Tiberius in his will not to expand the empire, cannot be sustained. Several scholars have demonstrated that the sources supposedly containing such advice to Tiberius were fabrications of historians, notably Suetonius and Dio Cassius, who were opposed to expansion and wished to represent Augustus, a model for later emperors, as more peacefully inclined than he actually was.[128]

Tiberius seems to have promoted Roman economic activity at the Egyptian Red Sea ports trading with South Arabia and South India. Under him trade between Rome and India, to judge by the numismatic evidence from India, increased sharply over the Augustan period. The fact that the earliest epigraphic evidence for direct imperial involvement in the Erythraean Sea trade, through imperial slaves/freedmen, comes from the reign of Tiberius suggests that Augustus' heir had a personal, active interest in the trade. The account of Josephus recording Tiberian efforts to invade Nabataea suggests that Tiberius desired to annex the region, but died before he could realize his goal.

Thus Tiberius' basic policy in the Erythra Thalassa seems to have been the consolidation of Augustan conquests and the further development, in Egypt at least, of Erythraean Sea trade. There was no attempt to expand further Rome's physical presence in the region of the Erythraean Sea, although the Nabataeans may have become more closely tied to Rome as a result of Tiberius' efforts against them. The reception at Rome of ambassadors from other Erythraean Sea states, an important indication of the growth of Roman prestige abroad under Augustus, is not recorded for the reign of Tiberius.

### *Trajan-Hadrian (A.D. 98-138)*

The major problem in dealing with the reigns of Trajan and Hadrian in general, and their Erythraean Sea policies in particular, is the dearth of literary accounts. Apart from Pliny the Younger's *Letters* and *Panegyricus*, Dio

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[127] H. D. Meyer (1961):3 does not believe that Augustus' policy was one of *imperium sine fine*, but was basically defensive; the first princeps annexed new territory only to aid in the defense of the empire; for a review of Meyer's book see P. A. Brunt (1963):170-176.

[128] F. Millar (1964b):82, 143, 149; Dio Cassius epitome 76.9.4-5; 76.11.1ff on Septimius Severus' Parthian War; epitome 77.13.1ff on Septimius' campaign in Britain; J. Ober (1982): 306-328; A. R. Birley (1974a):13-14, 20.

Chrysostom's observations on kingship, and Juvenal's oblique reference to Trajan,[129] no contemporary information has survived. To be sure later historians, especially Dio Cassius, refer to Trajan, but to a greater extent than for most emperors we are dependent on archaeological evidence.

The same is true of Hadrian's reign, for which no contemporary accounts remain. Dio Cassius, the problematical *Historia Augusta* and the later epitomers Aurelius Victor and Eutropius discuss him, and it is from these later accounts and from the abundant archaeological evidence surviving from his reign that we must reconstruct Hadrianic "policy" in the area of the Erythraean Sea.

Writers of the period A.D. 98-138 and, indeed, throughout the second century, it should be noted, evince an inquisitive, enlightened, ecumenical attitude about peoples and places beyond the borders of the empire. Arrian's *Indica*, *Parthica* and *Anabasis Alexandri* reflect the growing interest in the East in the early second century. Dionysius Periegetes' *De Situ Orbis*, probably of Trajanic-Hadrianic date, deals extensively with world geography and alludes frequently to South Arabia, India and the products and local customs of those regions.[130] Juvenal (*floruit* 98-138) often refers to India.[131] Lucian (*c.* 125-*c.* 180) exhibits considerable interest in and knowledge of Indian products, geography, mythology, philosophy and religion. He also shows a keen interest in the Erythraean Sea region and in China.[132]

The *Geography* of Claudius Ptolemy (*c.* 90-168), which uses mathematics and astronomy to locate all places described at a specific latitude or longitude, reveals contemporary interest in and increased knowledge of the East when compared to earlier periods. Ptolemy drew on both named and unnamed

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[129] For Pliny see B. Radice (1968):166-172; Dio Chrysostom, *First Discourse on Kingship* 36; *Third Discourse on Kingship* 2ff; *Fourteenth Discourse on Kingship* 13ff; for Juvenal see K. H. Waters (1970):73, 75.

[130] Bunbury (1959):II. 480-489 for a discussion of the disputed date of Dionysius. Bunbury dates him to the reign of Domitian while Warmington (1928):119 dates him to the period of Trajan. N. G. L. Hammond and H. H. Scullard (1970):352 date him to Hadrianic times. Dionysius Periegetes 37; 38; 52; 54; 178; 576-579; 592-595; 625; 631-632; 701-705; 709-714; 752ff; 802; 893; 924-925; 928-929; 930ff; 933-939; 940ff; 945; 950; 959-960; 1107-1109; 1113; 1115-1126.

[131] *Satires* 6.337; 6.466ff; 6.585; 10.1ff; 11.123-126; 15.163.

[132] On India see *Dionysus* 5-6; *The Fly* 1; *Nigrinus* 5; *Octogenarians* 4 (possibly not by Lucian); *A True Story* 1.8; *The Dream or the Cock* 16; *Icaromenippus or the Sky Man* 11; *On Sacrifices* 11; *The Lover of Lies or the Doubter* 24; *On Funerals* 21; *A Professor of Public Speaking* 18; *Alexander or the False Prophet* 44; 48; *The Goddess of Surrye* 16; 32; *The Passing of Peregrinus* 25; 27; 39; *The Runaways* 6; 7; *Toxaris or Friendship* 34; *The Dance* 17; *How to Write History* 31; *Saturnalia* 24; *Hermotimus or Concerning the Sects* 4; 27; 71; *The Ship or the Wishes* 23; 44; *Dialogues of the Sea Gods* 325; Schmitthenner (1979):97 believes that Lucian's accounts of India are of questionable value; on the Erythra Thalassa in general *Octogenarians* 16-17; *A True Story* 2.4; 2.11; 2.13; on China see *Octogenarians* 5; *The Downward Journey or the Tyrant* 21.

authorities in his treatise[133] and he is not only more precise in his locations of peoples and places than were Strabo, Pliny the Elder and, in some areas, the *Periplus*, but he also describes regions which these earlier sources never mentioned. Undoubtedly Ptolemy acquired some of this knowledge from travellers or merchants with an interest in the exploration, ethnography and geography of the East. One of Ptolemy's merchant sources was Maēs Titianus, who is believed by most historians to have explored extensively, possibly with the intention of developing, the northern silk route to China in the late first-early second century.[134] Indeed, the greatest era of the overland silk trade with China probably occurred *c.* 90-130 A.D.,[135] the very period in which Maēs is believed to have conducted his investigations. Exploration by travellers and merchants like Maēs and the increased use of the silk route with China would have provided the Romans with a greater opportunity to learn about East Asia. In fact Ptolemy is the first classical source to give brief accounts of East Asia (*Geog.* 1.11-12; 6.13-16) undoubtedly reflecting increased communication between the Roman empire and China. Although there is ancient Chinese evidence for the existence of direct contacts between China and Rome, with Chinese ambassadors and merchants visiting the empire in the late first-early second century and a Roman "trade mission" arriving in China in A.D. 166,[136] it seems that intermediaries conducted most of the trade between the two areas.

Ptolemy's very accurate descriptions of places in South Arabia and India[137] undoubtedly derive from the detailed accounts of eyewitness travellers in those areas. Ptolemy himself (*Geog.* 1.2) recognized the dependence of geographic description on the accounts of eyewitnesses, Certainly the building activity conducted by Ptolemy's contemporaries, Trajan and Hadrian in Egypt, Provincia Arabia, Judaea and Syria, suggests that commerce with India and Arabia was on the increase. It is possible that merchants trading with the East, or alternatively Easterners trading in the Roman empire—note the second century Indian mercantile family whose name appears on a sherd from Quseir al-Qadim perhaps indicating that one of the family members

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133 Bunbury (1959):II, 546-644; Rawlinson (1916):130-136; Dihle (1965):29; A. Dihle (1978):575-576; Rostovtzeff, *SEHRE*:604 n. 19; Rodinson (1974-1975):230ff; Ptolemy, *Geog.* 1.4-5 for unnamed sources; 1.6-21 for Marinus as a source; for Maēs as a source see Cary (1956):130-134; J. P. Vogel (1952):226-234.

134 On Maēs Titianus see Ptolemy, *Geog.* 1.11; Cary (1956):130-134; Bunbury (1959):II, 529; V. de la Blache (1896):468; Cary and Warmington (1963):197 date Maēs to *c.* A.D. 120; Lamotte (1953):96 dates him to *c.* A.D. 100; see also G. F. Hudson (1931):39.

135 J. Thorley (1971):71-80; see also Hudson (1931):39, 52, 68ff; M. G. Raschke (1978): 622ff; H. Seyrig (1936):398; Lamotte (1953):96-100.

136 On contacts between China and Rome in general see J. Ferguson (1978):581-603; on the 166 "trade mission" see *ibid.*, 594 and R. Delbrueck (1955-1956):255 and 267; F. Hirth (1966):13, 42, 188; F. J. Teggart (1969): throughout.

137 W. C. Brice (1979):1ff; A. Sprenger (1875):1ff; Vogel (1952):226-234.

resided at that port—supplied some of Ptolemy's information. Ptolemy's superior geographic knowledge of Eastern lands presupposes either an increase in the volume of the Erythraean Sea trade or an extension of the Erythraean Sea commerce into new regions in the first half of the second century.

### *Trajan (A.D. 98-117)*

Trajan's attention to the economic well-being of the empire as a whole may shed light on his and his successor's actions in the region of the Erythraean Sea. However one assesses his motives, an issue that has engaged many scholars, it is clear that Trajan instigated or completed several measures which assured more central control of the economies of the empire.

Until the Flavian period (A.D. 69-96) the central government farmed out the collection of all indirect taxes *(vectigalia)*. However, the economic crisis under Vespasian (A.D. 69-79)[138] forced the government to curtail its practice of tax farming and to assume a direct role in the collection of *vectigalia*. By the reign of Trajan the imperial government collected *vectigalia* directly in all the provinces except Egypt, Syria and Judaea.[139] In those regions, probably because of the difficulties of collection noted in Chapter 4, the *tetarte* continued to be farmed.

The development of the office of *curator rei publicae* under Trajan also reveals increased central government control of the empire's finances. Although the earliest evidence for the office comes from the reign of Domitian, the position is first amply attested under Trajan who, as in so many of his programs, followed and built on Domitian's innovations.[140] The officer, an imperial appointee, supervised the financial administration of the municipality or municipalities to which he had been assigned. The creation of this office greatly restricted municipal self-government and further extended the imperial government's control over the economic life of some of the empire's municipalities. Creation of the office suggests that there was local mismanagement of funds.[141]

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[138] Suetonius, *Vespasian* 8.1-4; 16.1-3; 19.2.

[139] G. Boulvert (1970):290; de Laet (1949):122, 331-332; on Trajan's administration in general see A. Garzetti (1960):125-139.

[140] J. C. Fant (1976): 56, 118; G. P. Burton (1979):465-466, 466 n. 3 believes that one Rufus at Smyrna was, under Nero, the earliest *curator rei publicae*. Yet Fant (1976):44-46 points out that Rufus had criminal jurisdiction while a *curator rei publicae* did not. Fant, 46-47, therefore, dismisses Rufus and Q. Caesius Fistulanus (*CIL* X.1266) under Vespasian—the latter because, unlike *curatores*, he was a native of Nola where he was *curator* of public works; see also B. R. Rees (1953-1954):83-105; for Trajan following Domitian's innovations see K. H. Waters (1969):385-405.

[141] F. F. Abbott and A. C. Johnson (1926):90-92; Pliny, *Epistles* 10.23-24; 10.31-34; 10.37-42 reveal how extensive the waste and extravagance was in Bithynia alone. Yet as Fant (1976):118-119 notes, Pliny's area of jurisdiction was much broader—a whole province—than a *curator*'s, which encompassed one or two towns; for a historical and social commentary on Pliny's *Epistles* see A. N. Sherwin-White (1966):525-731.

Trajan's debasement of the denarius also attests the emperor's concerns for the economic well-being of the empire. Metrological analyses of Trajan's denarii show such widely fluctuating extremes that no exact measurement of the debasement can be made. That a debasement of the denarius took place in Trajan's reign, however, seems certain; the average silver content of Trajanic denarii is noticeably lower than the fineness of denarii of his immediate predecessors.[142] In an abbreviated passage Dio Cassius (Epitome 68.15.3 = Xiph. 234, 20-22 R. St.) says:

> He (Trajan) also recalled all worn coins.[143]

The recall of badly worn coins may have been prerequisite to Trajan's plan to melt down and strike revalued, debased denarii. The recalled coins would supply some of the silver for the new issues.

Neither inflation nor the government's need for more cash—problems traditionally solved by debasement of the bullion content of the coinage—accounts for the reduced fineness of the later Trajanic denarii. There seems to have been another reason. Since the reign of Augustus, it had been government practice to maintain a bimetallic monetary system: gold and silver stood in a fixed ratio of approximately 1:12. Any fluctuation in the price of one metal theoretically necessitated a corresponding adjustment in the bullion content of coins containing the other metal. Nero's coinage reform of A.D. 64 had been undertaken to preserve this system[144] and it is likely that Trajan's debasement also sought to maintain this ratio.

*Papyrus Baden* 37, which dates May 4, A.D. 113, provides the only evidence for a drop in the price of gold during Trajan's reign. This document, a private letter, states that the price of gold in Egypt dropped from 15 to 11 drachmae. Although the unit at which gold was sold is not mentioned, it was, most likely, the scruple.[145]

Several interpretations of this drop in the price of gold have been offered. One might argue that the falling price reflects local circumstances in Egypt, not in the empire as a whole, that the empire's expanded gold supply from the newly acquired mines in Dacia did not cause the drop in gold prices stated by *P. Baden* 37.[146] This argument, however, is not convincing. It is very unlikely that the gold from Dacia was simply accumulated in the imperial treasury at

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[142] S. Bolin (1958):208-212 dates this debasement to between A.D. 103-111, possibly in 107 and discusses the percentage of the debasement; see also A. R. Burns (1927):419-420; E. Lo Cascio (1981):78-80.

[143] τό τε νόμισμα πᾶν τὸ ἐξίτηλον συνεχώνευσε.

[144] West and Johnson (1944):93 and n. 18; A. R. Burns (1927):408, 418.

[145] West and Johnson (1944):91-92; for text of letter, *ibid.*, 181.

[146] West and Johnson (1944):90-93 do not believe that Dacian gold affected market prices in any way; cf. O. Davies (1935):205 and n. 4; F. Heichelheim (1932):124-131.

Rome. On the contrary, it must have been used to finance Trajan's extensive building projects in Rome and the provinces and may well have been the 'treasury' for the Parthian campaign. The infusion of gold from the Dacian mines increased sharply the availability of the precious metal throughout the empire; prices for gold bullion must have fallen—as reflected in *P. Baden* 37–in relation to the value of silver. Such a decline in gold prices might have altered the traditional 1:12 gold:silver ratio so much that, in order to retain the rate of 25 silver denarii to the gold aureus, it was necessary to debase the silver content of the denarius. If we accept this premise, then Trajan's motive for debasement of the denarius was simply to maintain this traditional gold:silver ratio.

*Trajan and the Erythraean Sea*

In Egypt the period from Caligula (AD 37-41) to Trajan was, apart from some Jewish-Greek strife in Alexandria under Caligula and Claudius (A.D.41-54), a relatively peaceful one. The region continued to serve as a major thoroughfare for the commerce of the Erythraean Sea.

Archaeological evidence from the Red Sea ports points to expansion of commercial activities in Egypt under Trajan. We may infer from cartouches of Trajan in the Khem Temple in the center of Berenice[147] that the temple was in use at this time. Claudius Ptolemy, writing in the first half of the second century, also cites Berenice as a port in his day (*Geog.* 4.5). These facts suggest that Berenice was inhabited and commercially active in Trajan's reign. Excavations at Quseir al-Qadim in 1978, 1980 and 1982 produced both pottery and coins from the first half of the second century.[148] This evidence, together with Ptolemy's reference to the place (*Geog.* 4.5), indicates that the port was populated and engaged in trade at that date. A bath discovered near the Tetrarchic fort at Myos Hormos is akin in construction to a second century bath at Mons Claudianus and may be of approximately the same date. Ptolemy (*Geog.* 4.5) confirms what the bath complex suggests—Myos Hormos was a port active in maritime commerce in the first half of the second century.

Trajan's repairs of a Nile-Red Sea canal terminating at or near Clysma suggest that the port was active in the Erythraean Sea commerce of the day, a commerce so expanded that it was deemed necessary to re-excavate a canal—last dug over three hundred years earlier—to facilitate it.

Roman troops were stationed on at least one of the Eastern desert roads under Trajan. Ostraca from Bir/Wadi Fawakhir on the Coptos-Quseir road

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[147] D. Meredith (1957):56-70.

[148] W. R. Johnson, D. S. Whitcomb (1979b):67-143; D. S. Whitcomb (1982a):51-115; S. Sidebotham (1982a):243-256; J. Barghusen (1979):220-233; S. Sidebotham (1986): article forthcoming.

reveal the presence of a Roman military detachment there from the late first-early second century on.[149] Since no mining seems to have taken place on the site at that date, we might speculate that the main reason for the garrison was to protect the road along which trade, derived from the Erythraean Sea commerce, then passed between Quseir and Coptos.[150]

Epigraphic evidence confirms that mining and quarrying activity in the Eastern Desert, especially at Mons Claudianus and Mons Porphyrites, expanded significantly in Trajan's and Hadrian's reigns.[151] The quarries were closely controlled by the state which, to judge by the archaeological remains – forts, barracks, animal lines, bath and temple complexes—at both sites,[152] invested a considerable amount of time and expense in their operation. Presumably the government expected, and perhaps realized, a substantial income from the sale of stone from these quarries.

Additional evidence from Egypt reveals an increased awareness of, and perhaps expanded trade with, India. *Papyrus Oxyrhynchus* III.412 of the late first-early second century is a farce involving Greek speakers set in India. The existence of such a play suggests that India was at least familiar to the man in the street at that time.

Dio Chrysostom considered (32.36) the lively Alexandrian commerce in the Erythraean Sea in the Trajanic period as responsible for increased geographic knowledge of remote areas, and the detailed accuracy of Ptolemy's *Geography* seems to confirm Dio's observations. Chrysostom alludes (32.40) to audiences at a theater in Alexandria, including Bactrians, Scythians, Persians and Indians, to illustrate how far Alexandrian trade connections extended.

Dio Cassius recounts (epitome 68.29.1) that Trajan, upon reaching the mouth of the Persian Gulf during his Parthian campaign, expressed a desire to visit India in order to follow in the footsteps of Alexander.[153]

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[149] O. Guéraud (1942):147; see also J. Schwartz (1956):118-123; Lesquier (1918):447 dates the earliest Roman unit at Fawakhir to Domitian's reign.

[150] Guéraud (1942):142; A. J. Reinach (1910b):1; for a single graffito mentioning a Roman military unit, probably of Trajanic date, on the Coptos-Quseir road see A. Bernand (1972a): 48-51 no. 19.

[151] D. Meredith (1953b):128-129, inscription no. 2 of Trajan at the Isis Temple at Mons Porphyrites; D. Meredith (1954a): inscriptions of Trajan at Mons Claudianus: 105-106 no. 23 at *hydreuma;* 106-109, nos. 24-26 on the altar of the Serapis Temple; 109-110 no. 27 on an altar at the castellum; Lesquier (1918):439-442 on Trajan's activity at Mons Porphyrites; see also A. Bernand (1977):56ff. no. 20 for a Trajanic inscription at Mons Porphyrites and for Trajanic inscriptions at Mons Claudianus see 84ff. no. 37; 89ff. no. 38; 92ff. no. 39; 95ff. no. 40.

[152] Personal observations of the author in 1980 at Mons Claudianus; Meredith (1953b): 126-141; Meredith (1954a):103-123; T. Kraus, *et al.* (1967):108-205.

[153] This story is also recounted in Eutropius 8.3 and Zonaras 11.22; see also J. T. Reinaud (1863):232-233.

Embassies between Rome and other states in the Erythraean Sea region under Trajan reveal very little about Roman activity there. Dio Cassius says (epitome 68.15) that after the annexation of Nabataea in A.D. 106 and:

> After Trajan's return to Rome many embassies came to him from various barbarians and from the Indians.[154]

These embassies are tentatively dated to A.D. 107.[155] Dio's account is vague and too abbreviated to allow for much interpretation. All that one can conclude is that some type of contact existed between Rome and one or more Indian states in the early second century.

*Trajan's Annexation of Nabataea*

After the death of Tiberius there were no further efforts to annex Nabataea until the reign of Trajan. By A.D. 40 the two contenders who had prompted Tiberius' expedition were no longer on the scene; Aretas IV died in 39/40 and Antipas was deposed about the same time.[156] Caligula was then preoccupied with Mauretania, the Jewish problem in Alexandria and Judaea, and his abortive British expedition;[157] he had little time for Nabataea. Little is known of Malichus II (39/40-70/71), although he seems to have been on more amicable, if not more subservient, terms with Rome than his predecessor Aretas IV.[158] Rome, preoccupied with preserving peace in Judaea, had little inclination to annex the relatively peaceful kingdom of Nabataea. Moreover, Malichus II went to great lengths to please Rome. He sent 1000 cavalry and 500 infantry, mainly archers, to aid the Romans in their war with the Jews according to Josephus (*BJ* 3.68).

We might argue that the restoration of peace under the Flavians allowed Rome both the time and opportunity to annex Nabataea. Vespasian soon after his accession, in fact, annexed a number of client states in the East—Lesser Armenia, Sophene and Commagene—one aspect of his more general policy of administrative centralization of the empire. Some client states remained

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[154] πρὸς δὲ τὸν Τραϊανὸν, ἐς τὴν 'Ρώμην ἐλθόντα, πλεῖσται ὅσαι πρεσβεῖαι παρὰ βαρβάρων ἄλλων τε καὶ 'Ινδῶν ἀφίκοντο.

[155] Pirenne (1970):114-117; Rawlinson (1916):109; Guey (1937):27; Lamotte (1953):100; Nodelman (1960):109 dates this embassy to A.D. 99; Rawlinson believes that the Indian embassy was sent by Kadphises III or Kanishka. Yet Dihle (1965):32 notes that the century in which Kanishka lived is disputed; see also Cimino and Scialpi (1974):10; Rodinson (1974-1975):219 for further bibliography on the subject; Cary and Warmington (1963):102; Kahrstedt (1921):9; O. de Beauvoir Priaulx (1862):274.

[156] Hammond (1973):24; Smallwood (1976):119; Hoehner (1972):261-262.

[157] Smallwood (1976):174-180 on Caligula and his problems with the Jews in Judaea; Josephus, *AJ* 18.261ff; on his problems with the Jews in Alexandria see Josephus, *AJ* 18.257ff; 19.284-285 and V. A. Tcherikover and A. Fuks (1957):71ff and V. A. Tcherikover and A. Fuks (1960):25ff; Philo, *Embassy to Gaius*.

[158] Hammond (1973):27; A. Negev (1977):635.

nominally independent, but Vespasian accelerated the trend of incorporating client states directly into the imperial provincial administrative system.[159]

Nabataea was one of the larger client states in the East which retained its nominal independence under Vespasian and his successor sons. We know little of Rome's relations with King Rabbel II (70/71-105/106) before A. Cornelius Palma, governor of Syria in 106, was ordered to annex the kingdom.[160] Nabataea apparently managed to retain some degree of independence while Rome was engaged in other pursuits. Parsimonious by nature, and compelled to restore the shattered Roman state and treasury after the extravagances of Nero and the crippling civil wars, Vespasian was not inclined to take on the costly task of annexing new territories unnecessarily.[161] Although he revived the Tiberian practice—arrested and reversed by Caligula—of annexing client states in the East, Vespasian, for whatever reason, did not believe that Nabataea was ripe for annexation, and Domitian, even if he had considered Nabataea a problem, or alternatively a prize, was never in a sufficiently secure position to undertake a campaign in the East.

Indeed, in the period from Vespasian to Trajan the only major Eastern campaigns against rebels or Roman clients were directed towards Judaea.[162] Most Roman emperors had been reluctant to rule Judaea directly and, because of the complexities of relations with the Jews, had preferred the region to remain a client state ruled by local dynasts. However, by the end of the Jewish revolt in A.D. 70/73 only two nominally independent client states of Rome remained in the region of the Erythraean Sea: the territory ruled by Agrippa II, son of Agrippa I, great grandson of Herod the Great and Nabataea. Agrippa II's realm included Auranitis, Trachonitis, Batanaea, Gaulanitis and Paneas, which he ruled with Rome's blessing until his demise in *c.* A.D. 92/93.[163] Because Agrippa II died without close heirs Rome annexed his territory, assigning part to the province of Judaea and part to Syria.[164]

Several reasons have been adduced for Trajan's annexation of Nabataea in 106.[165] Until Trajan's time conditions inside Nabataea itself were apparently,

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[159] Luttwak (1976):107, 112, 217 nn. 167-170; J.-P. Rey-Coquais (1978):50; cf. G. W. Bowersock (1973):140.

[160] Dio Cassius epitome 68.14.5.

[161] Suetonius, *Vespasian* 19.2 and Dio Cassius epitome 65.8.2ff note that the parsimonious aspect of Vespasian's personality was the butt of contemporary jokes; see also H. J. Loane (1938):138; A. B. Bosworth (1973):49-78; L. Homo (1949):190ff; for Vespasian in general see J. Nicols (1978).

[162] S. Appelbaum (1977):355-396.

[163] The date of the death of Agrippa II is debated; see Smallwood (1976):354; Rey-Coquais (1978):50 and n. 67 places Agrippa II's death before 96; Luttwak (1976):112; Sartre (1982):43; T. Frankfort (1962):659-672.

[164] Smallwood (1976):354; Rey-Coquais (1978):49-53.

[165] H. I. MacAdam (1979):17-21 discusses the evidence for and against the dates 105 and 106 and concludes that the Ain Gedi documents prove that the year of annexation was 106; R. Paribeni (1927):10 dates the annexation to 105, but the start of the provincial era to 106.

not conducive to annexation. However, by 106 at the latest the last Nabataean king, Rabbel II died. Although Rabbel II seems to have had a son, Obodas,[166] the Romans proceeded to annex the kingdom anyway. Perhaps Obodas was too young to rule on his own and the Romans, unable to find an appropriate regent for the young prince, felt annexation was the only alternative. It may be that Obodas predeceased his father thus leaving no legitimate heir to the throne. This, too, might have led to Roman annexation. Some believe that Rome coveted Nabataea because of the wealth it had acquired from caravan trade with South Arabia and the Persian Gulf.[167] This seems unlikely. Nabataea had been a Roman client state since 63 B.C.[168] If Roman cupidity had been a motive for annexation, opportunities had existed for more than a century. When annexation finally came, in fact, trade through the kingdom may have been on the wane. Much of the caravan traffic may no longer have passed through central and southern Nabataea. The Erythraean Sea trade routes had also grown up further west via the Egyptian Red Sea ports and to the east from Mesopotamia via Palmyra to the cities of the Decapolis.

There is an additional argument against Roman annexation of Nabataea on account of the kingdom's wealth. The Roman treasury was very well off under Trajan prior to 106.[169] Pliny the Younger's *Panegyricus*, an obsequious work honoring Trajan, reveals that Rome prospered under that emperor. Trajan renounced the *aurum coronarium* early in his reign; [170] eased the inheritance tax in some cases (*Panegyricus* 38.1-7); refused to accept gifts of money; distributed the military bonus and civilian largesse (*Paneg*. 40.1; 41.1); accepted no legacies given him out of fear (*Paneg*. 43.1-5) and cancelled debts to the fiscus (*Paneg*. 40.3; 40 5). All these actions suggest that the state did not need the real or imagined wealth which the Nabataeans possessed. D. Graf believes that Rome annexed Nabataea to secure its right flank prior to Trajan's Parthian War.[171] Alternatively, H. I. MacAdam and K. H. Waters argue that Trajan annexed Nabataea in order to protect Palestine, Syria and Egypt from nomadic

[166] Meshorer (1975):78 n. 197.

[167] Hammond (1973):39; Préaux (1950-1951):134; M. P. Speidel (1974):935 and n. 8; Rey-Coquais (1978):54, Kortenbeutel (1931):65.

[168] Josephus, *BJ* 1.178; *AJ* 14.31-33; 14.80-81; Plutarch, *Pompey* 41.1ff; Appian, *Roman History* 12.106; C. H. Kraeling (1938):34; Guey (1937):25; J. Starcky (1955):92.

[169] C. de La Berge (1877):141ff; R. Syme (1930):55-70.

[170] de la Berge (1877):141.

[171] D. Graf (1978):7; for some of Trajan's other preparations for his Parthian War see W. E. Metcalf (1975):39-108 who discusses the attribution of drachmae in a coin hoard. Ones previously attributed to the mint at Caesarea in Cappadocia he convincingly reassigns to a mint somewhere in the province of Arabia, perhaps at Bostra. He believes that this mint supplied troops in Trajan's Parthian campaign as early as 111 and the mint ceased to coin in 115. He does not suggest why minting ceased before the end of the campaign, but perhaps the Jewish revolt of 115-117 was the cause; Guey (1937):27-29 also discusses Trajan's preparations for the Parthian campaign as early as 111/112.

invasions originating in the deserts beyond the borders of Nabataea.[172] Nabataean and Safaitic graffiti record a series of clashes between Safaitic tribes and the Nabataeans, including the revolts of Muḥārib and Damasī early in the reign of Rabbel II which were successfully suppressed.[173] One Safaitic graffito refers to a Nabataean revolt against Rome,[174] but since there is little or no evidence for resistance to the Roman annexation of 106, the revolt mentioned in the graffito may have occurred after that date. The graffiti are too truncated to gauge the seriousness of the "wars" and "revolts" mentioned therein. Classical authors are silent regarding nomadic-Nabataean troubles prior to the annexation in 106 and, with the possible exception of C. Caesar's campaign mentioned above, they do not record nomadic raids into Syria and Palestine prior to 106. Thus, while security considerations might have motivated Trajan's annexation of Nabataea, there is no reason to believe that they were compelling factors.

One other fact suggests that Nabataea was not annexed fundamentally for security reasons. The governors of provinces in or bordering on troubled areas traditionally were appointed by the emperor and were backed by a military force adequate to preserve the peace. While Provincia Arabia was governed from 106 until 262 by a *legatus Augusti Propraetore*, that is a governor appointed by the emperor, the region was, apparently, considered peaceful enough that only a single legion was stationed there in 106.[175] This does not suggest that security considerations were paramount motives for annexation.

I propose another reason for annexation. Literary and archaeological evidence indicates that the Hauran region of southern Syria and northern Jordan near Bostra was an area settled by the Nabataeans in the late first century B.C., if not earlier, by Herod and perhaps as a result of prompting by Rome during the Gaius expedition.[176] However, from the mid-first century on there was increased Nabataean building activity in this area; the Nabataeans and Romans may even have cooperated in the development of Gerasa and Bostra as commercial centers.[177] Although the area north of Amman (Philadelphia) and the Hauran is devoid of Nabataean pottery, the large number of Nabataean tombstones and inscriptions mentioning kings Malichus II and Rabbel II[178] suggest

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[172] MacAdam (1979):4; K. H. Waters (1975):422-423.

[173] G. W. Bowersock (1983):154-159; E. Littmann (1904):143-144 no. 45; F. V. Winnett (1973):54-57; Sartre (1982):131 associates these disturbances with the annexation of 106; F. V. Winnett and G. L. Harding (1978):325 no. 2113.

[174] F. V. Winnett and G. L. Harding (1978):406-407 no. 2815; Sartre (1982):131.

[175] MacAdam (1979):42; Sartre (1982):77-97.

[176] E. Littmann (1914):ix-x, 83-84; Littmann (1904):85-93.

[177] Graf (1978):6; Bowersock (1973):139-140; A. Boëthius and J. B. Ward-Perkins (1970):439-447, nn. 48-56, 576; see also F. E. Peters (1977):263-277.

[178] On pottery see K. Schmitt-Korte (1979):2 notes that the reasons for this lack of Nabataean pottery are speculative; S. Mittmann (1970):1-165 surveyed 346 sites in northwestern Jordan (see useful chart 256-264) and mentions no Nabataean sherds at any of these sites; on tombstones and inscriptions see Littmann (1914):1-2; 2-6; 21-24; 27-29; 30-33; 34-35; 52-55; possibly 71-74.

that it was in the last half of the first century that there occurred a noticeable increase in the settled population of the area. Undoubtedly farming was an important economic pursuit, for the Hauran, along with the Moab, had better soil and more rainfall than other areas of Nabataea and was probably as important an area of cereal production as it is today.[179]

The apparent rise in population in the Hauran in the second half of the first century may also have been due to the shifting trade routes. The apparent decline in the use of routes from the northwest Hejaz via Petra to Gaza in the course of the first century seems to have been due, in part, to the growth of maritime routes by way of the Egyptian Red Sea ports and increased use of the overland caravan tracks from Palmyra. The passage of Erythraean Sea commerce through the Hauran and the region of the Decapolis may have been a factor in the prosperity of those areas.[180] The Hauran and Decapolis may have provided supplies to the caravans. Agriculture may also have replaced, somewhat, the dwindling transit trade passing through Nabataea as a source of employment for the population and of revenue for the government. Clearly the Hauran, had become a major agricultural center in the kingdom of Nabataea prior to Roman annexation.

These facts may explain the Roman decision to annex the kingdom. Roman civilization was based on a settled urban life supported by agriculture. The Romans would have little control over or influence upon a basically nomadic or pastoral population engaged in part-time commerce, part-time herding. There was much more opportunity to control and "Romanize" a settled agricultural population. Unwittingly, perhaps, Malichus II and Rabbel II, prompted by economic exigency, provided the necessary prerequisites of a settled agricultural way of life with which the Romans could easily identify and which they could more easily govern. Perhaps a settled, agricultural life, had developed sufficiently under Malichus II and Rabbel II that on the latter's death the Romans felt capable of ruling Nabataea directly.

Though a number of ancient authors note the annexation, we do not now know for certain whether the initial garrison of the new province of Arabia was the Legio VI Ferrata or III Cyrenaica and no details of Palma's campaign are known.[181] Although there is still some debate, the archaeological and numismat-

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[179] Little archaeological work has been undertaken in the Moab, but see the recent, ongoing survey of J. M. Miller (1979):43-52; Bowersock (1971):228 and n. 59 also discusses the Nabataean shift to a sedentarized, agricultural way of life at 'Avdat; P. Lieftinck, *et al.* (1957):42-43 and E. Kanovsky (1976):46 shows that the region of Amman, Gerasa, Irbid and Dera'a receive 200-700 mm. of precipitation per year and that these regions are today major cereal producing areas.

[180] Spijkerman (1978):17, 23-42 gathers ancient texts on the Decapolis; for more on the Decapolis see H. Bietenhard (1963):24-58.

[181] Dio Cassius epitome 68.14.5; Ammianus Marcellinus 14.8.13; Eutropius 8.3; Festus 14.3; Sartre (1982):79; D. L. Kennedy (1980b):283-309; C. M. Bennett & D. L. Kennedy (1978):163-165; for III Cyrenaica see Bowersock (1983):81 and note 18.

ic evidence seems to point to a relatively peaceful annexation.[182] The boundaries of the kingdom are not precisely known and we remain uncertain whether Provincia Arabia encompassed all or only part of the former kingdom.[183] However, Roman hegemony over the northern regions of the new province was probably more secure than its control of the southern because of the north's larger population, settled agricultural way of life, and proximity to the Roman provinces of Judaea and Syria. Although there is epigraphic evidence for the presence of Roman military units in present-day Saudi Arabia—at Hegra after 117-138 and elements of the Legio III Cyrenaica at Al-Jawf, one third of the way from the Jordan River to the Persian Gulf, on the edge of the Nefūd Desert[184]—I doubt that direct Roman control over these lightly settled areas was secure. Certainly there is little evidence that regular Roman military units normally patrolled these remote areas. Rome more likely recruited *foederati* locally to patrol the region and keep the tribes in check.[185]

If we find it difficult to determine the motives for annexation, the positive benefits of the take over are more apparent. Annexation meant that direct land communications between Egypt and Judaea via Sinai were possible without

[182] Graf (1978):6-7; Préaux (1950-1951):132; Trajanic coins bear the reverse legend ARABIA ADQ(uisita) which may suggest peaceful annexation. Had there been serious hostilities the coin legend would have read ARABIA CAPTA; see H. Mattingly (1966a):96-97, nos. 474-476; Bowersock (1970):37-38; Mommsen (1909):152 believes that there was some resistance to annexation as does Paribeni (1927):10 who believes that this is indicated because Palma was awarded *ornamenta triumphalia* by the senate at Trajan's request (*CIL* VI.1386); yet the inscription does not specify that Palma received this honor because of his activities in Nabataea; he could have received *ornamenta triumphalia* for other endeavors. A. Negev (1963):121 also believes, based on archaeological evidence from 'Avdat, that there was some resistance to Roman annexation, but Bowersock (1971):228-229 discounts Negev's archaeological evidence. Bowersock (1983):80-81 and Kennedy (1980b):287 do not think that the annexation was entirely peaceful; see also Sartre (1982):131; Spijkerman (1978):20 and n. 54.

[183] MacAdam (1979):28, 32 and Paribeni (1927):13 believe that more or less all of Nabataea became Provincia Arabia while Graf (1978):4ff. does not. Graf is reluctant to include the Hejaz within the boundaries of Provincia Arabia; see also Negev (1977):643 who does not fix with certainty the boundaries of Nabataea or Provincia Arabia; Hammond (1973):29, 31 believes that Nabataea's boundaries fluctuated with the kingdom's political vicissitudes; Sartre (1982):17 is not sure, but 17-75 notes later modifications; on the northern boundaries of Provincia Arabia at different times in its history see E. Kettenhofen (1981):62-73; see also Bowersock (1971):230-231; Bowersock (1970):38-39; M. P. Speidel (1977b):688; H. Seyrig (1941a):218.

[184] Speidel (1974):935 notes troops of the ala veterana Gaetulorum and R. C. Barger (1969):139-140 notes a painter of the Legio III Cyrenaica at Hegra; D. L. Kennedy (1982): 188-190 notes an altar erected by a centurion of Legio III Cyrenaica to Jupiter Hammon, the patron god of camel caravans and desert routes at Al-Jawf. In addition to the already known Latin inscriptions from Al-Jawf, which include one of Marcus Aurelius and L. Verus (A.D. 161-165) and Septimius Severus and Caracalla (A.D. 197-211), Kennedy also notes one of Marcus Aurelius and Commodus (A.D. 177-180).

[185] Graf (1978):4ff; H. Lammens (1928):310, 313 on Roman use of Arab tribes on the periphery of the desert in Syria and Arabia.

passing through foreign territory (Sinai had been part of Nabataea). However, I doubt if this was a major motive for or result of the annexation of Nabataea for most traffic between Egypt and Judaea was by sea along the coast.

One important result of the annexation was increased economic interdependence among Syria, the Decapolis and the Eastern Mediterranean coastal cities. The agricultural development of northern Nabataea in the first century has been noted. Archaeological and epigraphic evidence reveals that a large number of public works were built in the Hauran after 106 which facilitated commerce among regions adjacent to the Decapolis.

Trajan built a road in the newly annexed province probably between 106 and 114 which, so inscribed milestones say, went *a finibus Syriae* [i. e. from Bostra, capital of the new province] *usque ad Mare Rubrum* [i.e. to Aila on the Red Sea]. Trajan also constructed branch roads leading from the new highway, the Via Nova.[186] The construction of these roads, most originally built for purely military purposes, also facilitated transportation to markets supplying the nearby regions,[187] and further aided in the sedentarization and Romanization of the population. Under Trajan and his immediate successors cisterns, irrigation canals and aqueducts were constructed at Bostra, Suweida, Arra, Gadara, Safa, Gerasa and Kanata to help safeguard the water supply, a necessity of life in the Hauran, Judaea and Arabia which depended heavily upon water conservation for farming.[188] Cultivation of the vine in the Gerasa district was very important as a Greek inscription containing a portion of a vineyard law indicates.[189] Gadara in the Decapolis was a good district for wheat and barley production and other areas of the Hauran were famous for their beef.[190] This agricultural exploitation of the Decapolis and Hauran required a sizeable settled population to build and maintain the irrigation works and to farm. Under Trajan some new settlements arose and older cities, like Gerasa, prospered anew. This type of building activity, which took place in the region soon after annexation,[191] suggests that a settled pattern of life already existed which the Romans encouraged further.

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[186] Kennedy (1982):287ff; *ILS* II.5834; 5845a on the Via Nova and *CIL* III.14176, 2 and 3; *AE* 1927, 40, no. 151 (a milestone near Gerasa) for branch roads.

[187] Heichelheim, *Roman Syria* (*ESAR* 4):246; Préaux (1950-1951):136.

[188] F. M. Heichelheim, *Roman Syria* (*ESAR* 4):142ff and nn. 21, 30; 246; *IGRR* III.1273; 1289; 1291.

[189] *IGRR* III.1341; Heichelheim, *Roman Syria* (*ESAR* 4):140 and n. 140.

[190] For barley and wheat see Heichelheim, *Roman Syria* (*ESAR* 4):128 and n. 10; 152 and n. 8 for beef production.

[191] Préaux (1950-1951):136 and nn.; for Trajanic and Hadrianic activities at Gerasa and the Decapolis see Kraeling (1938):46-51; Rey-Coquais (1978):53; MacAdam (1979):66-67, 105, 113ff notes Roman attempts to sedentarize the nomads in Nabataea after 106 and observes that Provincia Arabia was never very urbanized, but dominated by rural communities; Boëthius and Ward-Perkins (1970):439-447 and nn. 48-56; Littmann (1914):1-6, nos. 1-2; 24-27, no. 27; 30, no. 33; 36-37, no. 40; 52-55, nos. 60-67; 74, no. 96.

Through the construction of amenities described above—some, such as the roads and the aqueduct at Kanata, by the central government, others built by local money and initiative—the imperial government together with the local authorities promoted the Augustan idea of economic cooperation among regions as a step towards increased political unity within the empire as a whole. Two papyri, *Michigan* 465 and 466 dated A.D. 108, which attest the economic prosperity of the new province and the relationship between it and merchants at the Egyptian city of Pelusium in the early second century, reveal the success of this endeavor.[192] Thus Trajan's annexation of Nabataea, whatever its motives, resulted in increased cooperation among Egypt, Provincia Arabia, Judaea and Syria.

Contemporary authors comment upon Trajan's efforts to unite distant peoples through trade and commerce. Dio Chrysostom, writing early in the second century and surely referring to Trajan's own activities (*Third Discourse on Kingship*, 127), believes that the ideal ruler reviews armies, subdues provinces, founds cities and builds roads and bridges. Pliny the Younger praises (*Paneg*. 29.2-3) Trajan's promotion of the empire's economic welfare by constructing roads and harbors and linking distant peoples by trade. Juvenal also alludes (*Satires* 14.275ff) to extensive—though not necessarily state-stimulated—maritime trade in the early second century:

> Look at our ports, the seas, filled with big vessels. The [number of] men at sea is now greater than those on shore. Fleets will go wherever hope of profit beckons...[193]

It is evident from the archaeological evidence discussed above and the literary testimony that Trajan improved economic prosperity of the empire through extensive building projects which facilitated commerce. Based on Lucian's observations in *c*. 170, this prosperity, founded in part on frequent and easy travel and trade with India, via Egypt at least, continued well into the second century.[194]

*Hadrian (A.D. 117-138)*

Hadrian's abandonment of Trajan's conquests in Parthia and his fundamental shift in frontier policy from one of active acquisition of territory to one of defense founded on a strong, basically "fixed position" military have been

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[192] Préaux (1950-1951):138-139; Kennedy (1980b):289 n. 21 and R. W. Davies (1969):226 and n. 104 for revised dating of the *Michigan Papyri* 465 and 466.

[193] Juvenal 14.275ff: aspice portus et plenum magnis trabibus mare: plus hominum est iam in pelago. veniet classis quocumque vocarit spes lucri ....

[194] Lucian, *Alexander or the False Prophet* 44; *Hermotimus, or Concerning the Sects* 4.

discussed frequently.[195] How did this alteration of Roman frontier policy under Hadrian affect Roman policy in the Erythraean Sea?

Hadrian's reversal of Trajan's policy of acquiring territory for the empire was based, at least in part, upon financial considerations. On the death of Trajan the state was in a precarious financial position due to the costs of the Parthian War and increased expenditures on the army.[196] Hadrian restored the financial situation by abandoning some of Trajan's conquests; Fronto says (*Principia Historiae* 10) that Hadrian gave back Dacia and the parts of Parthia that Trajan had conquered. Fronto was in error about Dacia which, along with Nabataea/Provincia Arabia, Hadrian retained. Actually, Hadrian gave away nothing that he, or Trajan, could have controlled. Hadrian surrendered only the trans-Euphrates "provinces", which frequently had changed hands and would do so again.[197]

Unlike Trajan's acquisitions of Parthian territory, the provinces of Dacia and Provincia Arabia, were, in the "cost benefit" analysis, worth maintaining for they more than paid for themselves or were strategically important to the defense of the empire. The application of the concept of "cost benefit" to the annexation of new areas, so evident a consideration under the early principate, continued to be a factor in Roman policy in the Trajanic and especially the Hadrianic period. As Appian indicates:

> Owning the best part of the land and sea, they [the Romans] have, on the whole, tried to preserve their empire through prudence. They do this rather than extend their rule over poor and profitless tribes of barbarians, some of whom I [Appian] have seen at Rome offering themselves, through their embassies, as subjects. However, the emperor would not accept them because they would be of no use to him.[198]

However, Appian declares (*Roman History*, Praef. 7) that the Romans sometimes retained regions where they spent more than they acquired in revenues. This was done out of a sense of honor. As in the republic and early principate, "cost benefit" factors of Roman annexation policy might be overridden by considerations of the strategic importance of a region to the overall security of the empire.

Another aspect of "cost benefit" may be evident in connection with the abandonment of Trajan's conquests east of the Euphrates. Some scholars

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[195] E.g., B. W. Henderson (1923):57ff; Rostovtzeff, *SEHRE*:358ff; B. W. Henderson (1927):343ff; M. K. Thornton (1975b):432-476; E. Birley (1956):25-33.

[196] *HA*, *Hadrian* 6.5; Henderson (1927):341; Henderson (1923):58-59.

[197] For more on Fronto see E. Champlin (1980).

[198] Appian, *Roman History*, Praef. 7: ὅλως τε δι' εὐβουλίαν τὰ κράτιστα γῆς καὶ θαλάσσης ἔχοντες σώζειν ἐθέλουσι μᾶλλον ἢ τὴν ἀρχὴν ἐς ἄπειρον ἐκφέρειν ἐπὶ βάρβαρα ἔθνη πενιχρὰ καὶ ἀκερδῆ, ὧν ἐγώ τινας εἶδον ἐν Ῥώμῃ πρεσβευομένους τε καὶ διδόντας ἑαυτοὺς ὑπηκόους εἶναι, καὶ οὐ δεξάμενον βασιλέα ἄνδρας οὐδὲν αὐτῷ χρησίμους ἐσομένους.

do not believe that Hadrian abandoned the regions east of the Euphrates without obtaining some concessions from Parthia, probably of an economic nature; two events might be adduced as evidence for such concessions.[199] A statue raised in the agora of Palmyra to Julius Maximus, a Roman centurion who accompanied a caravan to Spasinocharax on the Persian Gulf in December 135,[200] suggests that the Roman military protected caravans deep into Parthian territory. However, it does not seem to have been a regular practice for Roman troops to escort Palmyrene caravans into Parthia; Palmyra had its own mounted troops who served in this capacity.[201]

There is evidence for a temple to the deified emperors established at Vologesias on the Euphrates by Soades son of Boliades, a Palmyrene, in the middle of the second century if not earlier.[202] The deified emperors must be Roman and the establishment of a temple to them in the Parthian emporium of Vologesias is curious. However, the existence of such a temple in Parthian territory is not evidence for Parthian concessions to Rome. The edifice was probably only a small sanctuary built in the Palmyrene business district of the city and does not necessarily indicate concessions by Parthia to Rome. Such a temple to deified Roman emperors outside Roman territory is not unique—the one at Muziris in South India was noted above—and suggests no more than political/religious attachments to the homeland of Roman subjects residing abroad.

Neither the single example of military protection offered by a Roman centurion to a Palmyrene caravan inside Parthian territory nor the establishment of a temple to deified Roman emperors at Vologesias proves that some *quid pro quo* arrangement existed whereby Rome, through its client Palmyra, acquired commercial concessions inside Parthian territory. Parthia would have had no reason to agree to such concessions. Rome did not exploit the internal strife which took place inside Parthia between 127-128/129 to its advantage.[203] In fact, Hadrian seems to have made several conciliatory gestures towards Parthia. He returned the Parthian monarch's daughter who had been captured when Trajan took Ctesiphon and also restored the golden throne to Parthia.[204] These events do not depict a weakened Parthia ready to make political or economic concessions to Rome. Even if he had desired such concessions from Parthia, there is no way that Hadrian could have enforced his

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199 P. Jouguet (1931):19-20; Nodelman (1960):111ff.

200 M. P. Charlesworth (1951):142; Nodelman (1960):112; I. A. Richmond (1963):53; E. Will (1957):267; H. Seyrig (1941c):242 for text of the inscription; for similar activities between Palmyra and Vologesias see C. Dunant (1956):216-225.

201 M. I. Rostovtzeff (1932c):806-808.

202 Rostovtzeff (1932c):800, 811; Nodelman (1960):113; R. Mouterde and A. Poidebard (1931):101-115; Schwartz (1960):28.

203 N. C. Debevoise (1938):242.

204 Debevoise (1938):242.

demands, preoccupied as he was between 132-135 with a serious Jewish revolt and war with the Alani.[205]

Hadrian furthered the economic and political unity of the region of the Erythraean Sea by consolidating and regulating commerce. One traditional Roman method of achieving economic interdependence and political stability followed by Hadrian was road building; his construction of the Via Hadriana in Egypt, linking Antinoë with the Egyptian Red Sea ports in an effort to promote the fortunes of the former city, and his tying together of the road network in Palestine were important steps in this direction. In addition, Hadrian built extensively throughout the empire, undoubtedly doing more than any other emperor to increase the economic prosperity of the Roman provinces through building projects.[206] He constructed Antinoë in Egypt, and he seems to have begun, in earnest, a policy of urbanization in Palestine by founding Aelia Capitolina in Judaea and by reconstructing on pagan lines Neapolis, Tiberias and Sepphoris.[207] Hadrian's protracted stay at Gerasa in the winter of 129/130 seems to have coincided with new construction in the city. Hadrian had just come from Athens where he advertised the construction of a new area of that city with an arch bearing an inscription. This recent endeavor may have been repeated at Gerasa. There, a similar dedicatory inscription honoring Hadrian on the inner face of a triumphal arch seems associated with the building of a new quarter of the city. In fact C. H. Kraeling believes that the construction and dedication of a new quarter at Gerasa was very probably the work of Hadrian.[208] Possibly, because of Hadrian's benefactions to them, the citizens of Caesarea Maritima dedicated a temple to him.

The Eastern Desert of Egypt offers additional indications of expanded Roman commercial activity under Hadrian. The discovery of two Hadrianic graffiti and two other graffiti possibly of the Hadrianic period on the Coptos-Quseir road suggests that the road was in use at that time.[209] The epigraphic evidence from the quarries at Mons Claudianus and Mons Porphyrites reveals extensive Roman activity under Hadrian.[210] There is no indication that any

[205] Debevoise (1938):242; on the Jewish War see Dio Cassius epitome 69.12.1-69.14.3; on the Alani War see Dio Cassius epitome 69.15.1-2.

[206] R. MacMullen (1959):209, 215, 223-224 n. 12; M. K. Thornton (1975b):450-451; Dio Cassius epitome 69.5.2-3; Boëthius and Ward-Perkins (1970): index, *s.v.* "Hadrian."

[207] On Aelia Capitolina see Smallwood (1976):432-435; L. Mildenberg (1980):311-335; S. Follet (1968):76-77; A. H. M. Jones (1931a): 82.

[208] Kraeling (1938):50-51; Boëthius and Ward-Perkins (1970):437.

[209] Bernand (1972a):40-42, nos. 4a, 5; 116-120, nos. 54-55.

[210] Meredith (1953b): at Mons Porphyrites: 126-129, inscription nos. 1-2 for Hadrian at the Serapis Temple; Meredith (1954a):at Mons Claudianus: 103-105, inscription no. 22 for Hadrian at Serapis Temple;110-111, no. 28 for Hadrian on stele at castellum; 113-114, no. 33 = ostracon probably from castellum dated *c.* 136; Kraus, *et al.* (1967):108-205; Lesquier (1918):443 for Hadrianic activity at Mons Claudianus; for Hadrianic ostracon from Mons

major construction or repair of Egypt's Red Sea ports occurred during Hadrian's reign, but there is evidence that the ports were active at the time. Numismatic and ceramic evidence from Quseir al-Qadim and cartouches of Trajan and Marcus Aurelius in the Khem Temple at Berenice imply that the prosperity of these ports continued during Hadrian's reign. That the Via Hadriana passed by these ports and Myos Hormos is additional evidence that all three were inhabited and commercially active in Hadrian's day.

Hadrian's propensity for regulation and consolidation is evident in Egypt. The Red Sea littoral and Eastern Desert changed from a military to a civilian administration sometime between A.D. 90 and 132 according to the Coptos Tariff (*OGIS* 674) and *Papyrus Hamburg* 7. This region was transferred to the control of the Epistrategos of the Thebaid. It is uncertain under which emperor this took place, but Trajan and Hadrian are the likely candidates.

Hadrian's close judicial supervision and regulation of income from Egypt was based on the agricultural production of the province, which in turn was dependent upon the annual flooding of the Nile. The great concern that the Nile's annual diluvium be used to the utmost agricultural benefit is attested in a number of papyri.[211] Augustus issued the *Gnomon of the Idios Logos*, a fiscal document concerning government officials in Egypt, which reflects this spirit of regulation. Our best knowledge of the document derives from a copy dated *c.* mid second century A.D. The *Gnomon* carefully regulates the levying and collection of fines according to status or nationality.[212]

Hadrian's extensive peregrinations around the empire, especially in the East, reveal his interest in acquiring a better understanding of the empire and its subjects.[213] The emperor's travels allowed him to learn of and personally solve problems an area might have. He acted as a unifying symbol, a father figure, for his subjects. Hadrian further demonstrated interest in individual regions and the contributions each made to the welfare of the empire as a whole by striking a series of coins depicting the provinces and their attributes.[214] This was the first time that the Roman mint had represented the provinces in a peaceful light. To be sure previous emperors had coins struck representing the provinces, but only as newly conquered areas or territories where rebellion

Claudianus which may mention an imperial freedman see Cl. Préaux (1951):354-363; J. F. Gilliam (1953):144-146; see also Bernand (1977):59ff, no. 21 for a Hadrianic inscription at Mons Porphyrites; 98ff, no. 42; 106-107, no. 44 for Hadrianic inscriptions from Mons Claudianus.

211 Bonneau (1971):176ff on the Roman period and the Nile flood in general until Diocletian:148-214.

212 P. R. Swarney (1970):119-122 dates the document to between A.D. 90 and 160.

213 G. W. Bowersock (1969):120-123 for Polemo's accompaniment of Hadrian on his journeys and the chronology of Hadrian's travels; Thornton (1975b):451-453.

214 Mattingly (1966a): catalogues Hadrian's prolific provincial series: *adventus* types, 487-496; provincial army types, 497-504; provinces personified, 504-517; *restitutor* of provinces types, 517-526; see also Thornton (1975b):446.

had been suppressed.[215] The bellicose message on these issues is unmistakable. On the other hand, one could not misinterpret the peaceful ecumenical message of Hadrian's provincial coin series.

Other events in Hadrian's principate suggest that consolidation and regulation were important objectives of his administration. In 137 the *boule* of Palmyra established a tariff listing the fees charged for the import and export of certain categories of goods. That an imperial freedman took part in collecting these duties suggests that the imperial government had a hand in the publication of this tariff, which was a modified version of earlier ones. Perhaps the *boule*'s decision to create a new tariff for the city was prompted by Hadrian's visit there in 137, at which time he granted special legal and financial privileges to the city for which the citizens offered thanks.[216]

The reign of Hadrian is, as regards Roman policy in the region of the Erythraean Sea, a study of contrasts. On the one hand, Hadrian reversed the Augustan-Trajanic tendency to incorporate client states or new territories into the Roman empire. Hadrian acquired no new territory; in fact he abandoned Trajan's untenable trans-Euphrates acquisitions. On the other hand, Hadrian seems to have carried on the policy, initiated by Augustus, of further developing and linking economically the Roman provinces bordering the Erythraean Sea and by continuing and expanding Roman commerce with other states in the region.[217]

### *Roman Policy in the Erythra Thalassa under Trajan and Hadrian*

Compared to the reign of Augustus, the literary evidence from the period of Trajan and especially Hadrian reveals little of contemporary Roman or non-Roman attitudes towards Roman activity and expansion in the region of the Erythraean Sea. However, the abundant archaeological remains from the period of Trajan-Hadrian throughout the empire, and particularly in the area of the Erythraean Sea, indicate that both emperors sought to promote economic prosperity and economic interdependence among regions, as had Augustus and Tiberius, by various building projects. Road construction, the excavation of canals and irrigation works, the erection of new cities and aqueducts or the refurbishment of old all suggest that the Erythraean Sea trade expanded in the early second century. Inscriptional evidence from the area

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[215] A. S. Robertson (1962): for sestertii of Vespasian bearing the reverse legend IVDAEA CAPTA see 202-203, nos. 90-91, C3837-C3841 and pl. 34; for sestertii of Domitian bearing the reverse legend GERMANIA CAPTA see 307, nos. 120-122, C3891 and pl. 53; A. S. Robertson (1971): for Trajanic denarii bearing the reverse legend DAC(ia) CAP(ta) see 20, nos. 128-131, and pl. 4.

[216] Nodelman (1960):111; see also A. Baldini (1974):119ff.

[217] For Hadrian's economic development of other regions of the empire see E. Birley (1956):25-33.

referring to Trajan and Hadrian suggests that the local population approved of a Roman policy which sought to promote commerce both within the empire and between the empire and its Erythraean Sea neighbors. The increased interest in and knowledge of the East, especially India, China and South Arabia, reflected in the literature in this period, supports the contention that trade indeed did grow between Rome and other Erythraean Sea states. Egypt prospered in this period, but continued to be, as it had been in the Augustan period, a closed economic system integrated with the rest of the empire only to a limited extent.

While Trajan may have had delusions of grandeur, attemping to emulate Alexander the Great by attacking Parthia, no such delusions affected his attitude towards South Arabia. South Arabia was still viewed as a fabulously wealthy land and Roman cupidity was probably not less under Trajan than it had been under Augustus. However, there was one major fact which had changed between the time of Augustus and the rule of Trajan: the economic attractions of South Arabia were not as great. The empire increasingly produced many of the items it had imported in the time of Augustus. Evidence in chapter 2 revealed that by the period of the Flavians the empire produced within its boundaries almost every item it imported from South India and South Arabia. The quality of the domestically grown products may have been poorer and the demand for imports may have persisted or even grown, but by the reign of Trajan South Arabia and South India no longer monopolized the production of goods needed by the Romans. Consequently South Arabia no longer seemed the alluring prize it had been in the Augustan period. Trajan's motives for his military campaigns have been a major concern of scholars for years. Although some historians attribute economic motives or a desire for personal glory to Trajan's conquests of Dacia, Parthia and the annexation of Nabataea, detailed analysis of these cases refutes the concept of Roman economic imperialism as a motive for expansion.[218]

Hadrian, on the other hand, rejected completely one aspect of the Augustan-Trajanic policy in the Erythraean Sea; he sought no new territory in the region. Hadrian, however, did continue another policy of his predecessors; he was a great builder and traveller and sought, like emperors before him, to urbanize, Romanize, develop and economically integrate different areas of the empire, especially in the region of the Erythraean Sea. Dedicatory inscriptions reveal the popularity of this policy. His was a period of consolidation and reflection on the course of Roman policy in the area.

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[218] For Trajan's motives for annexing different regions see *CAH* 11:223-236 on Dacia; 236-238 on Nabataea; 239ff on Parthia; on Parthia see also R. P. Longden (1931):1-35; F. A. Lepper (1948); J. Guey (1937); Paribeni (1926):191ff on Dacia; Paribeni (1927):1ff on Parthia and Nabataea.

In the course of the first and second centuries the overland trade routes had altered. By the reign of Trajan the route from the northwest Hejaz via Petra to Gaza had been partially superseded by maritime routes leading to the Egyptian Red Sea ports. There was another caravan route which was gaining ground in this period: the route from the Persian Gulf, up the Euphrates to Palmyra and to the Mediterranean coast via the Decapolis or directly to one or more of the more northerly Levantine ports like Berytus or Antioch. Hadrian visited Palmyra in 129/130 and 137, at which time he granted special privileges and fiscal exemptions to the city. The contention that Palmyrene trade colonies at Vologesias and Spasinocharax indicate Parthian concessions to Rome as compensation for the return of territory captured by Trajan, is not persuasive. It would seem, rather, that Rome and Parthia reached some accommodation concerning the uses and development of the route via the Euphrates by Rome's agent Palmyra.

This route passed through Parthian territory which Rome could never permanently control. For the first time since the start of the principate a major Erythraean Sea trade route passed through a state with which Rome had been repeatedly at war. Parthia was Rome's equal and not merely a small distant state like those of South Arabia and South India whose ambassadors Rome treated as curiosities. Fluctuation in relations between Rome and Parthia would affect development of this growing trade route. Consequently, Hadrian and his successors increasingly had to consider Roman-Parthian relations when formulating Roman policy in the region of the Erythraean Sea.

### *Septimius Severus and Caracalla (A.D. 193-217)*

The literary and archaeological evidence from the reigns of Septimius Severus and Caracalla relevant to Roman policy in the Erythraean Sea is not as abundant as that from the periods of Augustus-Tiberius and Trajan-Hadrian. Not only is the chronology of events in the Severan period insecurely established, but a number of important archaeological and literary sources are themselves difficult to date. These chronological problems render interpretation of the late second-early third century evidence exceptionally difficult.

The contemporary literary sources continue to exhibit some interest in and knowledge of the East, especially India. Lucian writing about 170 indicates that it was quite easy to board a ship at Clysma and sail to India.[219] Dio Cassius and Clement of Alexandria[220] allude to trade with India and Arabia in the late second-early third centuries. Athenaeus also discusses trade with India

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[219] Lucian, *Alexander or the False Prophet* 44.

[220] Dio Cassius epitome 73.17.3; 73.24.1-2; 75.4.6; 76.14.3; Clement of Alexandria, *Paedagogue* 2.3.37.2; possibly 2.8.64.4; possibly 2.8.65.1; possibly 2.8.65.3; 2.10.107.3; 3.2.4.2; 3.2.10.1; 3.4.30.1; 3.4.30.4.

and Arabia, but his citation of earlier authorities suggests that he refers to earlier times rather than to his own day.[221] Aelian discusses Indian, Ceylonese and Arabian wildlife,[222] but like Athenaeus he often cites earlier writers or hearsay as sources of information. Moreover, the frequent, fanciful tales told by Aelian, Athenaeus and Philostratus (*Vit. Ap. Ty.* 3.2; 3.4; 3.8) about the feats of different Indian animal species cast doubt upon the reliability of those portions of their works dealing with India.

Philostratus is the main late second-early third century source of information on Indian customs, religion and philosophy; he also discusses Indian geography, climate and wildlife.[223] However, his accounts seem chronologically out of place, based as they are upon the travels of Apollonius of Tyana, who died late in the first century. Clement also briefly alludes to Indian and Arabian religious practices,[224] but his source for this information is unknown.

There are three main defects evident in writers of the Severan period who deal with the region of the Erythraean Sea. The heavy, seemingly almost exclusive, reliance on earlier sources suggests that late second-early third century writers had little recent knowledge of the Erythra Thalassa and implies that their accounts are possibly anachronistic, reflecting not contemporary events in India and Arabia, but events as they were several generations or even centuries earlier. The inclusion of fanciful tales in their accounts casts doubt on the reliability of their information, or their judgement. In addition their geographic knowledge was, in some cases, very poor: Herodian (3.9.3) confused Arabia Felix with Mesopotamia and Athenaeus (3.124c) identified Petra as the Indian capital. Clearly geographical knowledge had deteriorated since the days of Claudius Ptolemy.

The reduced quantity and quality of information on India and South Arabia may mirror a decrease in Roman trade with and exploration of those areas at that time. Alternatively, Roman trade with the East may have continued at the same level as earlier, but Roman knowledge of other Erythraean Sea lands decreased because this trade fell increasingly into the hands of non-Roman intermediaries like the Axumites who did not recount their travels to Roman writers. Whatever the reason for the dearth of contemporary knowledge of India and South Arabia, it is evident that the enlightened ecumenical attitude towards foreign lands exhibited in the early and middle second century gave way

[221] *Deipnosophistae* 2.58; 2.70; 3.77; 3.93; 4.153; 5.201; 5.205.

[222] *De natura animalium* 2.11; 2.34; 3.3-3.4; 3.41; 3.46; 4.19; 4.21; 4.24; 4.27; 4.32; 4.36; 4.41; 4.46i; 4.46ii; 4.52; 5.3; 5.55; 6.21; 7.27; 8.1; 8.15; 9.58; 10.4; 10.13; 11.14; 12.20; 12.32; 12.41; 12.44; 13.8-9; 13.18; 13.22; 16.2-16.16; 16.18; 16.31; 16.37; 16.39; 16.41; 17.2; 17.25-17.26; 17.29; 17.39-17.40.

[223] *Vit. Ap. Ty.* 1.18; 1.21; 1.32; 2.6-7; 2.9; 2.12; 2.18-20; 2.25; 2.29-32; 2.40; 3.1-2; 3.6; 3.11-14; 3.19-20; 3.23; 3.27; 3.35-36; 3.50-3.58; 5.37.

[224] *The Exhortation to the Greeks* 22P; 40P.

to a period of increased ignorance of those regions. Thus late second-early third century authors still exhibit interest in the East, but they do not give reliable contemporary accounts of that region; they reveal virtually nothing about South Arabia.

*Septimius Severus-Caracalla and Egypt*

Septimius Severus spent several years of his reign in the East and probably visited Egypt in late 199-early 200.[225] The purpose of the visit was to assert his authority over a region which had been loyal to Pescennius Niger during the recent civil war, to reorganize Egypt's finances, which were in disarray, and to site-see.[226] Septimius' establishment of a *boule* at Alexandria and the appearance soon thereafter of *boulai* in other Egyptian metropoleis may have been related to the financial revival of Egypt.[227] Because the Roman system had ruined the Egyptian peasantry and thereby undermined its tax base, Egypt's financial situation had deteriorated slowly but steadily throughout the first and second centuries.[228] The peasants, unable to meet the government's demands, had abandoned their lands in increasing numbers and, together with men made destitute by the civil wars or persecuted by Septimius as political enemies, turned to banditry.[229]

Septimius realized that a new basis for tax collection had to be established. His creation of *boulai* in Egypt raised many of its communities to the status of metropoleis. This gave aristocrats the local self-government many had desired for so long, but in return for this privilege they were forced to assume responsibility for tax collection. The members of town councils were now collectively responsible for the administration and financial obligations, including liturgies, of the towns. That the Prefects of Egypt continued to issue edicts against banditry and against exactions that caused it[230] suggests that local officials continued to impose liturgies and requisitions on the population which were so burdensome that economic necessity forced many to flee the villages, towns and cities turning to a life of brigandage. The peasants continued to abandon their lands and the aristocrats were obliged to assume more and more of the responsibility

[225] The dates for Septimius' visit to Egypt are debated; see M. Platnauer (1918):121ff., 127-128; G. J. Murphy (1945):28-29; A. R. Birley (1972):205ff.

[226] Dio Cassius epitome 76.13.1ff = Xiph. 311, 5-14R; *HA, Septimius Severus* 17.3-4.

[227] Lewis (1983):48-49; E. G. Turner (1975):15-16; J. G. Milne (1927):8-9; A. R. Birley (1972):208-209; A. K. Bowman (1971): 3 also believes that Antinoë had a *boule* from the time of Hadrian; see also Fraser (1972):94-95.

[228] Milne (1927):1-13.

[229] Milne (1927):8-9; J. G. Milne (1924):64.

[230] See H. Braunert (1964):164-194, 280-292 on such internal movements; Turner (1975): 15-16; Milne (1927):8-9; for examples of decrees against banditry see that of the Prefect Subatianus Aquila in 206 (*P. Oxy.* 8.1100) and that of the Prefect Baebius Juncinus in 210-214 (*P. Oxy.* 12.1408); see also Lewis (1983):202-204.

for the payment of taxes, a situation which eventually led to their impoverishment.

Roman commercial activity in the Eastern Desert and at the Egyptian Red Sea ports persisted during the Severan period. *Papyrus Oxyrhynchus* 45.3243 (A.D. 214/215) reveals that the quarries at Mons Claudianus were still in operation. The discovery of early third century graffiti on the Coptos-Quseir road left by a bronze worker, an engraver of hieroglyphs and probably by some soldiers[231] suggests that that route was still in use in the Severan period either as a road leading to quarries or, less likely, as a highway between Coptos and Quseir serving the Erythraean Sea trade. At present, unfortunately, there is little or no evidence supporting the contention that Quseir continued to function as a port active in the Erythraean Sea trade in the Severan period.

There is no archaeological evidence from the other Red Sea ports indicating their activity in the E ythraean Sea trade in the Severan period. However, the *Antonine Itinerary* andr *Peutinger Table* list both the stations on the road between Coptos and Berenice and Berenice itself. This suggests that the route to Berenice was in use and that the port of Berenice was active in the Erythraean Sea commerce when these itineraries were composed. Unfortunately, the precise dates of the *Antonine Itinerary* and *Peutinger Table* are uncertain.

D. van Berchem has argued for a Caracallan date for at least part of the Egyptian section of the *Antonine Itinerary*. Drawing on papyrological evidence, van Berchem contends that Caracalla planned a trip to Upper Egypt as far as Hiera Sycaminos which was cancelled at the last minute because of troubles in Alexandria and Mesopotamia.[232] Van Berchem believes that this section of the *Itinerary* (123-163; 164-171), taken in conjunction with a passage in the *HA* (*Severus Alexander* 45.1ff), reflects an edict published in Rome prior to Caracalla's Eastern trip that announced the route which the emperor would follow. Circulation of such itinerary-edicts to areas where the emperor planned to travel allowed his hosts to make advanced preparations at each of the proposed stops,[233] and it is possible that the Egyptian section of the *Itinerary*, which lists stations on the Berenice road, was connected with a proposed imperial visit. A recent study of the British section of the *Itinerary* has demonstrated that the document is much more accurate than heretofore believed. The evident precision of the *Itinerary* in Britain and Egypt suggests that the document may reflect imperial junkets throughout the empire at different times.[234]

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[231] Bernand (1972a):123-124, no. 58; 124-125, no. 59; 125-127, no. 60; 154-155, no. 89; 159-160, no. 91.

[232] D. van Berchem (1974):301-307; Lesquier (1918):466 believes that the Nubian portion of the *Itinerary* dates from the reign of Caracalla.

[233] On the Caracallan date of the Egyptian section of the *Antonine Itinerary* see van Berchem (1974):302; on Caracalla's trip to Egypt, 301.

[234] W. Rodwell (1975):76-101; for more on imperial journeys see F. Millar (1977):28-40.

Other evidence suggests that the Erythraean Sea commerce continued to pass through the Egyptian Red Sea ports in the Severan period. An undated, but possibly late second-early third century, inscription from Medamoud mentions Erythraean *naukleroi* and *emporoi* and three private individuals, Aelia Isidora, Aelia Olympias and Aelius Apolinarios (see Chapter 4). Other inscriptions discovered in Egypt indicate Palmyrene presence there and commercial involvement in the Erythraean Sea trade possibly in the Severan period.

There is additional archaeological proof of Severan building activity at Coptos. Septimius erected a pylon at one of the temples in Coptos.[235] Reinach speculates that a large statue base, found near an inscription—dated to 209/210 and mentioning Septimius Severus, his wife Julia Domna and their two sons Caracalla and Geta—bore the image of Septimius.[236] According to Reinach "Valerius...," who made a temple dedication at Coptos, was Valerius Datus, Prefect of Egypt in 216-217.[237] There is additional evidence of building activity at Coptos under Caracalla. French archaeologists found a colossal head, purportedly of Caracalla, and nearby they discovered an inscription mentioning Caracalla and Julia Domna reused in the base of a wall.[238] Caracalla's titulature: "In the name of the victory of our lord"[239] and omission of Septimius and Geta indicate that the inscription was carved after Geta's murder in 212.

It is apparent from the literary and archaeological evidence that there was some building activity at Coptos in the Severan period. All indications point to a continued, if somewhat diminished, prosperity in the late second-early third century at the Nile emporium. This prosperity, in all probability, was based, as it had been in the first and second centuries, upon the transit trade with one or more of the Red Sea ports.

### *Provincia Arabia-Judaea-Syria in the Severan Period*

There was Severan building activity elsewhere in the region of the Erythraean Sea trading network. The discovery of more than forty milestones of Severan date in Provincia Arabia attests extensive work on the roads in that period.[240] Many repairs were made on a stretch of the Via Nova between Philadelphia and Bostra, but other routes, including the Philadelphia-Gerasa road, also

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[235] Reinach (1911a):57.

[236] Reinach (1911a):57-58.

[237] Reinach (1911b):45; Milne (1924):62; *P. Lond.* 935-936; on Valerius Datus as Prefect of Egypt see G. Bastianini (1975):307.

[238] Reinach (1911b):45.

[239] *Ibid.*: ὑπὲρ νίκης τοῦ κυρίου ἡμῶν...

[240] P. Thomsen (1917):90-91; S. T. Parker and P. M. McDermott (1978):64-65; S. T. Parker (1976):19-31.

received attention.[241] There was also road building and repair under the Severans in Judaea. E. M. Smallwood believes that the road building activities under such short lived emperors as Pertinax (A.D 193) and Macrinus (A.D 217-218) reveal the implementation of a general policy of provincial improvement independent of the initiative of individual emperors.[242] However, the specific military requirements of emperors on campaign like Septimius or Caracalla also seem to have been responsible for much road construction and repair in Judaea, Syria[243] and Arabia. Large numbers of Roman troops were needed to carry out this massive overhaul of the road system and some units engaged in road building may have been transferred from the central regions of Provincia Arabia.

There is little evidence for Erythraean Sea trade through central or southern Provincia Arabia at this time. These areas had, most likely, lost most of the lucrative Erythraean Sea commerce to the Egyptian Red Sea ports and the cities of the Decapolis during the preceding century. However, Arab tribal unrest probably further impeded the use of caravan routes in the region. Epigraphic evidence documents the Severan response to these tribal raids. There is evidence of Arab tribal attacks on settlements in the Sinai in 191 and other tribal unrest in Arabia in 195-199 to which the Romans responded by building forts.[244] Severan fortifications included a castellum at Qaṣr al Ḥallābāt, a fort at Qaṣr al 'Uweinid, a castellum at Azraq built, or more likely repaired, in 201 by elements of the Legio III Cyrenaica and a watchtower near Qaṣr al Usaikhin erected by a detachment of the Legio III Cyrenaica in 201. All these fortifications, located along and near the northwestern end of the Wadi Sirhan, guarded that thoroughfare.[245] Their main function probably was to guard against Arab raids into densely settled areas of the Hauran to the west and northwest rather than to protect merchants travelling along the Wadi Sirhan. In fact there is no evidence that merchants ever used the Wadi Sirhan on a regular, large scale, basis. Raids along the Wadi Sirhan continued to trouble local residents until the 1920s. Local inhabitants, in fact, called it the Derb al Gazawat—the Way of the Raids.[246] The route further north and east between

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[241] For repairs of the Via Nova see Thomsen (1917):36; Parker and McDermott (1978):65; S. Mittmann (1966):78-80; G. Beyer (1935):129-159; for the repair of other roads including the section from Philadelphia to Gerasa see Thomsen (1917):37.

[242] Smallwood (1976):494; for milestones of Pertinax and Macrinus see B. Isaac (1978):51-54; B. Isaac and I. Roll (1982): throughout.

[243] Isaac (1978):51-54; Smallwood (1976):494-495 does not believe that Caracalla's road building in Judaea was associated with his Parthian War; Thomsen (1917):34-60; 61-68; Isaac and Roll (1982): throughout.

[244] Graf (1978):12-13; Kennedy (1982):39-40, 50, 75, 88-90, 124-125, 171-175, 190, 308-309.

[245] Parker and McDermott (1978):61-64; Kennedy (1982): 39-40, 50, 75, 88-90, 124-125, 171-175, 190, 308-309.

[246] Kennedy (1982):71.

Palmyra, the Euphrates and the Persian Gulf, important since the middle of the second century or earlier seems to have replaced the earlier tracks through Nabataea/Provincia Arabia.

Regular Roman units seldom seem to have ventured into the southern regions of Arabia, whose defense was left to locally recruited *foederati*.[247] Greek and Nabataean inscriptions from Ruwaffa, Saudi Arabia, dated to the joint reigns of Marcus Aurelius and Lucius Verus (161-169) are important in determining Roman-tribal relations.[248] There are four inscriptions: one Greek-Nabataean bilingual, two Greek and one Nabataean.[249] If. J. T. Milik's reconstruction of the last phrase of the Nabataean section of the bilingual is accurate, the dedication—in addition to telling of the erection of a temple on the site, details of which are given in the three other inscriptions—mentions a peace negotiated by the Romans between warring factions of the Thamudic tribal confederation.[250] Possibly the Romans recruited some of the Thamudic tribes as *foederati* at this time; certainly later, in the third century, they served in that capacity.[251] However, these *foederati* for whatever reason, were unsuccessful in checking the Arab tribal unrest which disrupted regions of Provincia Arabia in the Severan period.

The Ruwaffa inscriptions offer a rare glimpse into Roman-Arab tribal relations, but they also reveal an integral facet of nomadic Arab life: periodic raiding and warfare among tribes. Such razzias cannot have been unusual at any time, but the shifting of the trade routes towards Palmyra and to the Egyptian Red Sea ports in the course of the second century deprived these tribes of some of their livelihood either as guides, caravaneers or collectors of tolls from caravans passing through their territory. Perhaps a decline in the use of trade routes passing through Provincia Arabia forced the tribes living in the area to rely increasingly on raiding as a means of economic support. Deprivation of a peaceful, trade-related living may have caused the dissonance recorded in the Ruwaffa inscriptions. This strife accelerated in the course of the late second and early third centuries and spilled over into more settled areas of Provincia Arabia; the tribes who may have conveyed Erythraean Sea wares peacefully along the caravan routes in the early second century, deprived of that trade by the late second century, converted the tracks into paths of invasion into more prosperous areas of Arabia—the Hauran. By the Severan period these raids had become so severe that forts had to be built to contain the threat.

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[247] Graf (1978):4ff; S. T. Parker (1980):865-878.

[248] H. Seyrig (1957):259-261; P. J. Parr, *et al.* (1968-1969):215-219; P. J. Parr, *et al.* (1971): 54-58; Bowersock (1971):230-231; G. W. Bowersock (1975a):513-522; Graf and O'Connor (1977):52-66; Graf (1978):9-12; J. Beaucamp (1979): cols. 1467-1475; Sartre (1982):27-29, 84, 130-131.

[249] Graf (1978):9.

[250] Graf (1978):10; Parr, *et al.* (1971):54-58.

[251] Graf (1978):12; Sartre (1982):121-203.

There was some late second-early third century building activity in Arabia that was not related to warfare. The large eastern baths and the hippodrome at Gerasa seem to have been constructed under the Severans while a nymphaeum in that city is dated by an inscription to 191.[252] Sometime in the Severan period, probably under Caracalla, Gerasa acquired colonial status.[253] In the Hauran a temple to Tyche was built at es-Sanamayn in the Lejā in 191 and there was also a late second century temple erected at Slem, about 32 km. north of Bostra.[254] However, the extant archaeological evidence suggests that, compared to the early and middle second century, there was relatively little construction of edifices devoted to peaceful purposes in Arabia in the Severan period.

Pescennius Niger had received almost universal support in the East during the civil war with Septimius.[255] It was, therefore, imperative that the victor, whose wife and relatives were from Syria, gain the good will of this region. At first glance it would appear that Septimius dealt harshly with some of the Eastern cities which had espoused Niger's cause to the end. Initially Septimius meted out harsh treatment to Byzantium and Antioch.[256] Both these cities seem to have lost their independence, their status as *poleis*, and their land to the neighboring cities of Perinthus and Laodicea respectively; Byzantium and Antioch were also now subject to taxes.[257] However, the degraded status of both Byzantium and Antioch realistically could not be maintained, for they were much larger and more important than Perinthus and Laodicea. Both Byzantium and Antioch regained their former status within a few years. Byzantium had been besieged and destroyed by Septimius in 195, but already by 197 its former status had been restored; Antioch lost its titles and privileges to Laodicea in 194, but these had been restored by late 197 or 198.[258]

Septimius and Caracalla raised the civic status of a number of communities in Syria and Judaea. Both Perinthus and Laodicea seem to have retained the privileges won as a result of the civil war. Tyre and Laodicea, destroyed by Niger, were rebuilt and given the ranks of *metropoleis* in *c.* 194 and then *coloniae iuris italici* in 197/198; both cities regained some degree of their former prosperity.[259] Septimius also made Heliopolis (Baalbek) and Sidon colonies in 197/198.[260] Caracalla gave colonial status with Italian rights to Emesa, Palmyra and An-

[252] Kraeling (1938):54, 57-58; Boëthius and Ward-Perkins (1970):442.
[253] Kraeling (1938):57.
[254] Boëthius and Ward-Perkins (1970):434.
[255] Smallwood (1976):487.
[256] G. Downey (1961):239ff; R. Ziegler (1978):493-514.
[257] Ziegler (1978):493-514.
[258] Ziegler (1978):493-514.
[259] Ziegler (1978):498; Rey-Coquais (1978):56; W. B. Fleming (1915):73.
[260] Ziegler (1978):498; Rey-Coquais (1978):57 believes that Sidon became a colony only under Elagabalus.

tioch.[261] Under the later "Severans", Elagabalus (218-222) and Severus Alexander (222-235), other Syrian cities received colonial status: Arca, Berytus, Ptolemais, and Damascus.[262] The evident favor shown by the Severan dynasty towards Syria is not surprising considering the Syrian origins of Severus' wife Julia Domna and of the later "Severans." The possession of colonial status after Caracalla's issue of the *Constitutio Antoniniana* in 212 was a coveted, but hollow privilege. Colonial status increased the number of citizens liable to *munera*, but it did not necessarily exempt the city possessing the title from taxes.[263]

Judaea also benefited from Severan generosity. Passing through the region on his way to Egypt in 198/199 Septimius granted Sebaste colonial status and embellished the city with a number of public buildings.[264] Caesarea Maritima also received honorary titles perhaps from Septimius.[265] The urbanization process, begun in earnest by Hadrian in Judaea/Palestine, continued under the Severans. Septimius founded two new cities in the province: Lucia Septimia Eleutheropolis, on the site of the village of Beth Gabra between Jerusalem and Gaza, and Lucia Septimia Severa Diopolis on the site of Lydda.[266] Areas of Judaea that had been toparchies came under the territorial jurisdiction of newly created cities. This resulted in increased gentile control of land in Judaea and further promoted the Romanization of the province.[267]

The Jews of Judaea seem to have been peaceful and content under Severan rule. There was a flurry of synagogue construction and repair in Judaea in the late second-early third centuries.[268] The ban on the presence of Jews in Aelia Capitolina seems to have been relaxed under the Severans.[269] None of these peaceful activities lends credence to the account of Orosius (7.17.3) that there was a Samaritan revolt in 194 after Niger's defeat. Moreover, Dio Cassius, Herodian and Jewish literature make no mention of this revolt.[270]

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[261] Rey-Coquais (1978):56; Rostovtzeff (1932c):811 believes that Septimius made Palmyra a colony; for Antioch see Downey (1961):245.

[262] Rey-Coquais (1978):57 believes that Tyre and Heliopolis became colonies under Elagabalus or Severus Alexander, not under Septimius as Ziegler maintains; compare Murphy (1945):50 and Platnauer (1918):196.

[263] Rey-Coquais (1978):56 and n. 167 observes that Antioch was a colony with *ius italicum* which continued to pay taxes.

[264] Smallwood (1976):490; Jones (1931a):85 and A. H. M. Jones (1971):279 believes that Septimius granted Sebaste this privilege.

[265] Smallwood (1976):491.

[266] Smallwood (1976):491; Jones (1931a):85.

[267] Smallwood (1976):493.

[268] Smallwood (1976):497.

[269] Smallwood (1976):499.

[270] Smallwood (1976):488-489; The *HA* also fails to mention such a revolt at this time. Dio Cassius epitome 75.2.4 does refer to a robber named Claudius who operated in Judaea and Syria in *c*. 195/196, but this can hardly be equated with the revolt recounted by Orosius.

Thus is appears, following the civil war with Niger, that Septimius and Caracalla strove to win the allegiance of the East, especially Syria, Judaea and Egypt and to thwart tribal unrest in Provincia Arabia. The administrative reforms, granting of municipal and colonial privileges, road and urban construction promoted economic prosperity and interdependence in this region. We are uncertain whether these actions were dictated by long-term planning or were simply responses to the immediate exigencies of the Parthian campaigns, but the East under the Severans generally seems to have enjoyed a certain prosperity. Now we must see what role the Erythraean Sea trade played in this prosperity.

As we saw above, some of the Erythraean Sea trade routes to the Roman empire shifted in the course of the first century. In the course of the second century Palmyra gained in economic importance as a transit point for Erythraean Sea trade goods shipped from the Persian Gulf up the Tigris-Euphrates to the eastern Mediterranean coast. Together with the appearance of Palmyrene merchants in Upper Egypt—which indicates the continued passage of some of the Erythraean Sea trade through the Egyptian Red Sea ports and Coptos—Palmyra's acquisition of colonial status, and numerous inscriptions from Palmyra itself attest the commercial importance of that Syrian caravan city.[271]

A bilingual Greek-Palmyrene inscription from Palmyra of 193 honors Taimarsas, son of Taime, who led caravans to Spasinocharax on the Persian Gulf.[272] Another inscription from Palmyra of 199 mentions Ogelos who led a number of expeditions against the nomads to secure the safety of merchants and caravans.[273] A third bilingual inscription from Palmyra dated 211 honors Yaddai, a leader of caravans, whose father also led caravans; evidently the position was hereditary.[274] These inscriptions indicate that caravans continued to travel between the Persian Gulf, Palmyra and the Mediterranean coast under the Severans, a period from which much of the information on the organization of Palmyrene caravan traffic derives.[275] Unfortunately, there is little evidence regarding the extent of this commerce.

There is also very little information on customs duties levied by Palmyra or Rome on the Erythraean Sea trade in the Severan period. Roman tax farmers collected a 25% duty at the border between Syria and Parthia on goods imported from the East in 161 and 174, but none from the Severan period is known. Philostratus (*Vit. Ap. Ty.* 1.20)[276] mentions a tax gatherer *(ho telones)*

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[271] See J. Cantineau (1931): Rostovtzeff (1932c):793-811.
[272] Rostovtzeff (1932c):803.
[273] Rostovtzeff (1932c):803; Richmond (1963):53 n. 82; H. Ingholt (1932):289ff.
[274] Rostovtzeff (1932c):803-804.
[275] See Rostovtzeff (1932c):793-811; A. H. M. Jones (1974b):145.
[276] See also Debevoise (1938):204.

at Zeugma, but he seems to refer to Apollonius' day—the first century—rather than to his own.

There is other evidence of continued Erythraean Sea trade via Palmyra in the Severan period. A Greek inscription from Palmyra of 193 (*IGRR* III.1050) suggests that merchants preferred earlier aurei of heavier weight in their commerce with the East. This preference for earlier Roman gold coins may partially explain the dearth of aurei of Septimius, Caracalla and later third century emperors in India. For this reason the dearth of Severan coins from India reveals nothing of the volume or cost of Rome's trade with the Indian subcontinent at that time. The fact that no Roman coins later than Caracalla have been found in the east and central Andhra regions of India—an area where Roman traders were active in the second century[277]—and that very few coins of third century emperors after Caracalla have been found in India at all[278] suggests that Roman trade in coins with India virtually ceased after the second or third decades of the third century. The trade seems to have fallen increasingly into the hands of middlemen who may have preferred trading by barter.

### *Roman Policy in the Erythra Thalassa under Septimius Severus-Caracalla*

Unlike the periods Augustus-Tiberius and Trajan-Hadrian, the era of Septimius Severus and Caracalla reveals very little about contemporary attitudes towards Roman activities in the region of the Erythraean Sea. Contemporary Roman writers do, indeed, refer to the East, but not in relation to Severan activities there. There are several possible reasons for the failure of late second-early third century authors to mention Roman governmental activity in the area and for their silence regarding contemporary attitudes towards that activity. There is every indication, from the archaeological evidence, that the Erythraean Sea trade continued in the Severan period. Though the relative increase or decrease of this commerce compared to earlier periods cannot be determined, the general impression is that this trade declined or, alternatively, fell increasingly into the hands of non-Roman middlemen.

There is no evidence of non-Roman attitudes towards Roman activity in the Erythra Thalassa. Augustus and Trajan received embassies from other Erythraean Sea states, an indication that some diplomatic interchange took place, but no ambassadors are recorded between Rome and other Erythraean Sea lands in the Severan period. Evidently Rome was no longer considered a power to be reckoned with in the area as it had been in the first and early second centuries. Alternatively, with the annexation of Arabia and the develop-

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[277] P. Lal Gupta (1969):173-175.

[278] R. E. M. Wheeler (1951):375 lists some of Gordian III (A.D. 238-244).

ment of Egyptian ports, such embassies could come into contact with Roman provincials, including officials, and need not have gone all the way to Rome.

There seems to have been a noticeable shift in the trade routes between the time of Trajan-Hadrian and that of Septimius Severus-Caracalla. By the late second-early third century there is little evidence that any of the lucrative Erythraean Sea caravan routes still passed through the southern and central areas of Provincia Arabia. Indeed much of the Severan building activity in Arabia was concerned with the construction of forts and watchtowers. This evidence together with the epigraphic testimony suggests that parts of the province suffered from repeated raids by nomadic Arabs. However, the economic prosperity of the Decapolis in the mid-second century seems to have persisted until disrupted by the upheavals of the mid-third century,[279] an indication that the region prospered in part from trade passing between Palmyra and the coast. Inscriptions from Palmyra reveal that the Erythraean Sea trade from India via the Persian Gulf through that desert oasis flourished. The Palmyrenes were even involved in the Erythraean Sea trade via Egypt in the third century. The archaeological evidence suggests that the Erythraean Sea trade continued via the Egyptian Red Sea ports, but that Egypt was on the wane as a major Erythraean Sea trade route.

Another obvious difference between the earlier periods and that of Septimius Severus-Caracalla was that in the latter era there was no permanent Roman expansion in the area of the Erythraean Sea. Augustus annexed Egypt and attacked Arabia Felix; Trajan added Nabataea to the empire. Septimius temporarily added Mesopotamia, but this area was never a permanent part of the empire. It appears that the southern and central regions of Provincia Arabia were somewhat neglected in the reigns of Septimius Severus-Caracalla. If any Roman presence persisted in the area south of Petra it was—as probably it had always been—in the form of locally recruited *foederati*.

The Severans continued one "policy" in the Erythra Thalassa originally established by Augustus and carried out by his successors. The Severans promoted building and road construction which would effect economic interdependence, but the center of their activity shifted. Augustus-Tiberius and Trajan-Hadrian had built extensively in Egypt, Judaea, Provincia Arabia and Syria. The Severans also built in Egypt, Judaea and Provincia Arabia, but their construction and interest in these regions was dwarfed by their building activities and grants of colonial status to municipalities in Syria.[280] Building activity in Syria under the Severans may be explained partially by Severan dynastic connections with the province. However, there is another plausible explanation for Severan favor towards the major cities of Syria. Increased

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[279] Kraeling (1938):60; Boëthius and Ward-Perkins (1970):436ff.

[280] Heichelheim, *Roman Syria* (*ESAR* 4):246.

use of the Erythraean Sea trade route through Palmyra brought increased wealth not only to that city, but also to other Syrian cities through which this trade passed. Grants of colonial status to seaports like Laodicea, Tyre, Sidon and Berytus may have been due to the growth of these cities in the course of the second and early third centuries from the Erythraean Sea trade which reached them via Palmyra. The favor shown inland cities like Antioch, Emesa and Damascus may also stem from the fact that they grew wealthy from their location along the trade routes between the Levantine ports and Palmyra.

## CHAPTER SIX

# CONCLUSION

Ptolemaic commercial relations with other Erythraean Sea lands established a foundation upon which Augustus built after the annexation of Egypt. Initially the Ptolemies sought war elephants, ivory and gold gathered for shipment to Egypt at ports on the west coast of the Red Sea south of Egypt. Other than these items—and interest in gathering war elephants faded by the late third/early second century B.C.—the Ptolemies seem to have had little interest in the region. The Ptolemies did have direct contact with the monarchies of South Arabia, with the Nabataeans and Lihyanites of North Arabia and with areas of sub-Saharan Africa. However, there is little reference to South Indian products in Ptolemaic papyri and excavations conducted in South India to date have uncovered few Ptolemaic artifacts. These facts suggest that direct or indirect contact between South India and Hellenistic Egypt was not extensive.

The Ptolemaic economic policy of autarchy and the fact that the Ptolemies looked almost exclusively to their Mediterranean and Aegaean possessions for their wealth may explain this lack of commercial interest in the Erythraean Sea littoral. The appearance of a Ptolemaic official styled στρατηγὸς καὶ ἐπιστράτηγος τῆς Ἐρυθρᾶς καὶ Ἰνδικῆς Θαλάσσης in *c.* 110/109 B.C., however, may mark a change in this attitude. The voyages of Eudoxus of Cyzicus to India in about 116 B.C. may have caused the Ptolemies to look increasingly to the Red Sea and Indian Ocean for revenues. Whether this new official was appointed to promote Ptolemaic commerce in the Erythraean Sea is uncertain, but one of his responsibilities almost certainly included the reorganization of the Egyptian Red Sea coastal customs district. In this respect the στρατηγὸς καὶ ἐπιστράτηγος τῆς Ἐρυθρᾶς καὶ Ἰνδικῆς Θαλάσσης may have been the precursor of the Roman *PMB*. The Ptolemies, however, could never hope to dominate Erythraean Sea commerce in the West, for they were only a regional power in the southeast corner of the Mediterranean and had fierce competitors for the Erythraean Sea trade in the Seleucids and Nabataeans.

The Romans quickly exploited what the Ptolemies had begun. After the annexation of Egypt in 30 B.C., where they first came into direct contact with South Arabia and South India, the Romans slowly evolved a policy towards the Erythra Thalassa founded on patterns established early in the principate. Unlike the Ptolemies, the Romans, by the beginning of the Christian era, possessed all the lands of the eastern Mediterranean where caravan routes

from South Arabia terminated. Therefore, South Arabian and South Indian merchants trading with Mediterranean lands, *a priori*, had to consider the Roman political and economic policy vis-à-vis the Erythra Thalassa.

Analysis of the types of goods traded in the commerce of the Erythraean Sea reveals that many wares imported by the empire were considered, by Roman aristocrats at least, as necessities, not luxuries. Well-to-do Romans used myrrh, frankincense, pepper, etc. for medicinal, religious and culinary purposes and their sale price may have been subject to government control at least in the city of Rome. We do not know the volume and cost of this trade, but the empire seems to have paid—judging from the limited evidence from South Arabia and India—for most of its imports "in kind" rather than "in coin." In any event we have no evidence that the Roman government was concerned with the "gold flow," or with a favorable balance-of-payments.

A number of amenities were built within the Roman empire which facilitated Rome's Erythraean Sea commerce. In Egypt the Roman government itself seems to have constructed, enlarged or repaired a number of Red Sea ports and maintained the roads, forts and water points between these ports and the Nile emporia of Coptos and Antinoë. Trajan dug a canal between the Nile and the Red Sea port of Clysma which also facilitated trade with Alexandria. This canal was repeatedly repaired from Trajan's time until at least the ninth century.

We cannot be certain to what extent the Roman government was involved in the construction of facilities in Judaea, Provincia Arabia and Syria which aided Erythraean Sea commerce. The Roman army built roads which aided trade, but military considerations and not commerce were, in all likelihood, the initial reasons for road construction. On the other hand, a cryptic passage in Josephus (*AJ* 15.330) does suggest that Augustus ordered Herod to construct the new port of Caesarea Maritima.

Evidence for the Roman government's regulation, organization and taxation of the Erythraean Sea commerce is scanty. In Egypt it seems that the government sold passports from which it procured an income; these passports also helped the government to monitor trade. The passage of most of Roman Egypt's Erythraean Sea trade through Coptos and Antinoë or via the Red Sea port of Clysma suggests that the Roman government regulated the Erythraean Sea commerce into and out of Egypt by funneling it exclusively through these emporia.

Although we have no evidence that the Roman government regulated trade guilds involved in the Erythraean Sea commerce, the presence of Erythraean Sea *naukleroi* and *emporoi* and the existence of small, sometimes family-operated, sometimes more loosely organized, trading firms suggests that such guilds or *collegia* existed. Most traders were Egyptians, Greeks, Nabataeans, Palmyrenes, South Arabs, and, occasionally, Indians, though some of these

merchants seem to have come from the western Mediterranean. Some entrepreneurs were imperial slaves/freedmen conducting business for themselves or their patrons at the Red Sea ports of Egypt.

Until the early second century the Roman government farmed the collection of most duties, tolls and taxes it collected throughout the empire. After Trajan the government seems to have taken over most toll collection directly except in Egypt, Syria and Judaea, where the difficulty of collecting the 25% tax *(tetarte)* levied on Erythraean Sea goods crossing Roman borders was better left to private tax farmers. The mention of an imperial freedman as toll collector in the *portoria Palmyrenorum* suggests that the Roman government stepped in directly to make money from the Erythraean Sea trade at the municipal level. However, there is no evidence that the Roman government, unlike the Ptolemies, had a monopoly or farmed out monopolies on the sale of aromata and spices once these Erythraean Sea wares reached Roman territory.

A survey of Roman policy in the Erythra Thalassa in the period from Augustus to Caracalla has revealed a number of significant points. With the exception of the campaign of Aelius Gallus to Arabia Felix none of Rome's annexations of new territory in the region of the Erythraean Sea—Egypt, Judaea, Nabataea—seems to have been motivated primarily by economic considerations though economic benefits might result from such conquests. Rome acquired Egypt as a spoil of war. Rome annexed Herod's territory of Judaea only after his heirs proved incompetent, untrustworthy or died without providing their own trustworthy successors. Rome incorporated Nabataea into the empire because the region seemed sufficiently sedentarized and Romanized; lack of a competent heir to the throne of Rabbel II may also have been a factor. Conversely, economic factors often influenced the Roman decisions to abandon territory—e.g. conquests by Trajan—or to refuse to annex new territories.

Even when literary and archaeological evidence exists, it is difficult to interpret contemporary Roman and non-Roman attitudes towards Roman expansion in the region of the Erythraean Sea. Merchants at the Egyptian Red Sea ports, at Coptos, or at Alexandria might have praised Augustus because they perceived his attack on Arabia Felix as a promotion of their commerce. The Augustan authors seem enthusiastic about what Vergil called *imperium sine fine* (*Aeneid* 1.279), but they represented only one portion, admittedly a vocal one, of the Roman population. Undoubtedly, many other Romans were tired of war and did not agree that a limitless empire was a goal which justified continued warfare in distant lands.

Later accounts, such as Suetonius and Dio Cassius, sought to depict the first princeps as a peace-loving man, not at all inclined to imperialistic ways. Yet it is clear that there was less Roman expansion in the Erythraean Sea under Trajan-Hadrian and Septimius Severus-Caracalla than in the time of

Augustus. Suetonius' account of Augustus may reflect contemporary Hadrianic disdain for expansionist wars, but his sentiments were shared by many.[1] While inscriptions record thanksgiving and praise for Trajanic-Hadrianic building activities in the region of the Erythraean Sea, it was the peaceful activities of these emperors that were applauded. Moreover, it is noteworthy that Dio Cassius, writing in a period of expansion under the Severans, condemned the contemporary annexation of new regions as too expensive.

It is difficult to assess the importance of embassies between Rome and other Erythraean Sea states. The only extant accounts of these embassies derive from Roman sources which naturally sought to depict Rome as a great power whose approval and recognition the smaller states scurried to obtain.[2] Yet the substance of those embassies is unknown; the Chinese sources aside, we do not know from which states they came or whether they were "official" or merely merchants posing as diplomats to obtain favorable commercial treatment. However, that these embassies first appeared in Rome only after Augustus had annexed Egypt and attacked Arabia Felix and after Trajan had annexed Nabataea suggests that some, at least, were sent to discern Roman intentions in the region and perhaps only secondarily to facilitate trade. We would be wrong to infer that the dearth of embassies recorded in the period of Hadrian and Septimius-Caracalla implies a decline in commerce between Rome and other Erythraean Sea states. In fact, the volume of trade actually seems to have risen under Trajan-Hadrian.

Interpretation of literary evidence from the Augustan period reveals a positive support for Roman expansion in the Erythraean Sea, but that opinion might not have been shared by a thirsty, sick legionary in the deserts of Arabia in 26 B.C. whose observations on the subject have not survived. Contemporary attitudes about Roman activity in the Erythra Thalassa were probably as varied as public opinion today on any given subject. What survives from antiquity are the opinions of people approving imperial actions, or condemning them only many years later. Few dared to criticize contemporary rulers and those who did were silenced.

Did shifting trade routes affect policy or did policy shift the trade routes? This is a difficult question to answer for we do not know what motivated Augustus to develop maritime trade in the Erythra Thalassa. Trade by sea may have evolved simply because it was faster and cheaper than by land. This would have been a factor in the unintentional diversion of overland trade routes from Nabataea However, there is no evidence that Augustus diverted the trade routes as part of a long-range plan to effect a peaceful Roman expansion into Nabataea, even though the actions initiated by him did lead to this

[1] A. R. Birley (1974a):14.

[2] China, of course, is not included in this discussion.

end in A.D. 106. Rather it seems that the shifting of the trade routes affected Roman policy. Rome annexed Nabataea only after the trade had shifted and Nabataea had become sufficiently sedentary and agricultural. Rome could not have governed effectively the nomadic or caravan-oriented population of Nabataea; nor could the Romans have desired that the Erythraean Sea trade routes pass increasingly through Parthian territory. Thus the course which the trade routes followed dictated, to some extent, Roman policy.

Roman policy in Syria was in its formative stages under Hadrian with respect to the Erythraean Sea trade; it was only then that Palmyra began to flourish as a result of that commerce. Severan policy in Syria seems to have been dictated, to some extent, by shifting trade routes. Palmyra throughout the second-third century continued to prosper as a seemingly greater share of the Erythraean Sea trade passed through its territory. This economic prosperity was reflected in Syrian ports and cities straddling the trade routes to the west of Palmyra which also benefited from this commerce. These cities could not have prospered solely because the Severans so desired. Septimius' attempt to create prosperity at his home town of Lepcis Magna in Tripolitania failed because, unlike Syria, there was no genuine economic base to support the massive building project carried out there.

The evidence suggests that Erythraean Sea trade was an important aspect of the economies of Roman provinces in the region of the Erythra Thalassa, but that this commerce affected some provinces in the region more than others. Egypt and Judaea profited from the Erythraean Sea trade, but the economic structure of those provinces was not altered when that trade waned. On the other hand, Nabataea seems to have based much of its economic well-being upon overland trade. When that trade declined, a totally new, basically alien, settled agricultural way of life was adopted to cope with and replace the reduced trade.

The overall policy towards the area of the Erythra Thalassa as established by Augustus was consistently carried out by his successors. The opportunities and benefits which the Roman occupation of Egypt and the revitalization of Erythraean Sea commerce under Augustus offered to the Roman state were both immediate and long-range. The immediate benefits included additional sources of revenue, through *portoria*, for the government. Secondly, Augustus and his successors secured permanent, reliable sources of supply of some of the commodities required by the empire—grain from Egypt and frankincense, myrrh, pepper, etc. from abroad.

There were two long-range opportunities provided by the improved commercial situation in Egypt and the Erythraean Sea region. One was successfully exploited; the other was never fully realized. The revitalization of the Egyptian and Judaean economies under Augustus and his successors was based to some extent upon the Erythraean Sea trade. Although no statistics are available,

it seems likely that the Egyptian Red Sea ports, Eastern Desert roads and Nile emporia like Coptos flourished mainly as a result of the Erythraean Sea commerce. Alexandrian manufacturers profited because they converted many of the materials imported from South Arabia, South India and Ceylon into finished products for the Mediterranean market or for reexport to other lands of the Erythraean Sea littoral.[3] Erythraean Sea trade generated other jobs. Roman subjects from the region also transported products from South Arabia, South India and perhaps Ceylon to Egypt, then through Egypt to Alexandria and other Mediterranean ports.

In Judaea there is less evidence than in Egypt for the manufacture or reworking of imported Erythraean Sea wares into finished products for an export market. Judaea's function in the Erythraean Sea trade was more restricted; Gaza and the Herodian ports of Anthedon and Caesarea Maritima acted as half-way points in the transportation of goods from South Arabia to western Mediterranean ports and by doing so promoted economic interdependence among regions and stimulated the local economy.

The construction and use of the Judaean ports suggests that the Roman government promoted Erythraean Sea commerce via Nabataea. Roman expansion of the Erythraean Sea trade benefited the Nabataeans by increasing their importance as transporters and middlemen. Thus the Erythraean Sea commerce promoted—directly through the private sector—the economic revitalization of these areas. We should not over emphasize the role of this commerce. Many factors, especially agricultural, were important in the economic renaissance of Egypt and Judaea; the Erythraean Sea trade was but one aspect of this rejuvenation.

The second long-range opportunity was not easily realized. Augustus' main concern was the political unification of diverse regions of the empire under Rome's aegis. Augustus and his successors stimulated economic interaction, hence economic interdependence, among the various regions of the empire by massive building projects—including the construction of ports, roads, warehouses, canals—to achieve political stability and unity. Yet the economic realities of the day and, more importantly, the political requirements of the government impeded the success of this endeavor.

Despite idiosyncracies, each economic region within the empire was basically agricultural. There is some debate on how considerable interregional agricultural commerce in staples was in the Roman empire. One scholar argues for a fairly sizeable long distance trade in such basic necessities, but the question is not settled. Such long distance shipment of staples may have been confined to major population centers like Rome, Antioch and Constantinople, and may have bypassed less populous urban centers which depended more on staples

[3] L. C. West (1917):48.

transported from nearby regions. Much of this transport of staples was both trade and tribute: the annual shipment of grain from Egypt, Africa and Sicily to Rome was both trade, in the hands of private entrepreneurs, and tribute. Wax tablets found in a Roman villa at Murecine, a suburb of Pompeii, disclose a substantial private grain trade between Egypt and the region of Puteoli in the first half of the first century A.D.[4] There were occasional emergency shipments of grain, as in the case of crop failure in Judaea in *c*. 26/25 B.C. and again in A.D. 45, but large scale inter-regional exchange of food staples—which would have created not only increased economic interdependence but also would have increased specialization of production that would have maximized the overall agricultural output of the empire—was not extensive and regular. Agricultural exchange among the various regions of the empire was limited to products that realized relatively high profits: olive oil, wine, garum, metals, timber,[5] etc. Large-scale exchange of basics like grain was hindered by a poorly developed transportation system which was subject to the limitations of weather (maritime) and prices (land).[6] Consequently most areas depended on local production.[7] Agricultural interchange of bulk staples could provide some, but not a permanent, solid basis for Augustus' goal of economic interdependence.

The Pax Romana fostered the development and expansion of industry and the exchange of manufactured products throughout the empire. Trading manufactured goods was an additional means of achieving economic interdependence and political unity, Trade in goods like pottery, glass, metalwork, textiles, art, etc. was extensive, but it could never be the main basis for the economic unification of the empire. Commerce and industry were never the kernel of Roman economic wealth, for the technology of the period militated against this.[8] Increased consumer demand, a necessary prerequisite to expanded industrial production existed and a fair number of the estimated 50-60 million inhabitants of the empire did have some purchasing power. Such consumer demands would have accelerated trade. However, the minimal purchasing power of the masses severely restricted their acquisition of many manufactured products.[9] More specifically in the region of the Erythraean Sea, the political-economic importance of Egypt meant that it could never be fully integrated into the economic system of the empire; it remained a closed economic system with its own coinage, quite distinct from that of the rest of the empire.[10]

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[4] Casson (1980a):26-29, 33; for debate on the scale of inter-regional trade in staples see K. Hopkins (1983):84-109.

[5] For timber see R. Meiggs (1982):325-370.

[6] T. F. Carney (1973):74; Rostovtzeff, *SEHRE*:146; A. H. M. Jones (1964):841-842.

[7] P. A. Brunt (1971):706.

[8] M. I. Finley (1965):29-45 discusses Roman contributions to technology.

[9] Carney (1973):45; W. I. Davisson and J. E. Harper (1972):237-238; Starr (1982):104-106.

[10] A. C. Johnson (1951):19 believes that the emperors did not intend to isolate Egypt economically. Yet as long as it had a separate fiduciary coinage some degree of isolation from the rest of the empire was inevitable.

## APPENDIX A

# THE TERMS "ERYTHRA THALASSA" AND "RUBRUM MARE"

The list below, which is by no means exhaustive, but rather representative, contains Greek and Latin authors and inscriptions set out in chronological order. Many of the ancient sources used the terms Erythra Thalassa, Erythra Thalatta and Rubrum Mare indiscriminately to refer either to the Red Sea or the Indian Ocean or the Persian Gulf. Occasionally the terms are used to encompass all of these bodies of water inclusively; oftentimes the terms have uncertain designations.

### *Greek Sources*

*Theophrastus, Enquiry into Plants, fourth-third century B.C.*
Erythra Thalassa = Red Sea 2.6.5
Erythra Thalassa = Red Sea 4.7.1

*Polybius, second century B.C.*
Erythra Thalassa = Persian Gulf 13.9.5

*SB V 8036 (110/109 B.C. or 74/73 B.C. or 45/44 B.C.); A. Bernand, (1969): inscriptions 52.1-5; 53.1-3 (both 62 B.C.); 56.5-9 (51 B.C.?); SB I 2264.1-7 (49 B.C.)*
Erythra and Indika Thalassas = Red Sea and Indian Ocean

*Diodorus Siculus, The Library of History, 56-36 B. C.*
Erythra Thalatta = Red Sea, Persian Gulf, Indian Ocean 1.19.6
Arabian Gulf (connected to Nile by canal) = Red Sea 1.33.8-9
Erythra Thalatta = Persian Gulf (Tigris and Euphrates empty here) 2.11.2–3
Megale Thalatta = Indian Ocean 2.35.1
Erythra Thalatta = Red Sea (?) 2.53.3
Arabian Gulf = Red Sea 3.14.6
Erythra Thalatta = Red Sea 3.18.3
Erythra Thalatta = Red Sea (?) 18.5.3
Erythra Thalatta = Persian Gulf (where Tigris empties) 19.17.3
Erythra Thalatta = Persian Gulf 19.100.5-6

*Strabo, Geography, Augustan*
Arabia Felix bounded by Persian Gulf and Arabian Gulf 2.5.32
Erythra = Persian Gulf 11.14.7
Arabian Gulf = Red Sea 15.1.4
Persian Gulf to East of Arabia Felix, Arabian Gulf to West and a sea to the south—as a whole called Erythra Thalassa 16.3.1
Thalatta = Red Sea 16.4.8

*New Testament, Letter to the Hebrews*
Erythra Thalassa = Red Sea (body of water crossed by Moses) 11:29

*Josephus, Jewish Antiquities, Flavian*
Erythra Thalassa = Persian Gulf, 1.39

*Periplus Maris Erythraei, perhaps second half first century*
Erythra Thalassa = Red Sea, Indian Ocean Persian Gulf throughout

*Dio Chrysostom, 32nd Discourse to the Alexandrians, Trajanic*
Erythra Thalassa = Red Sea 36
Indian Ocean = Indian Ocean 36

*Plutarch, Lives, second century*
Erythra Thalassa = Red Sea *Antony* 69.2

*Dionysus Periegetes, De Situ Orbis, Domitianic-Hadrianic*
Indika Thalassa = Indian Ocean 37
Erythra Thalassa and Mare Aethiopion 38
Persikan = Persian Gulf (?) 52
Arabios Kolpos = Red Sea (?) 54
Arabias Thalassas = Red Sea (?) 178
Indikos Oceanos = Indian Ocean 893

*Ptolemy, Geography, second century*
Erythra Thalassa and Arabian Gulf 4.7
Erythra Thalassa = Indian Ocean 6.7
Indikos Pelagus = Indian Ocean 7.2
Indian Sea with its gulfs the Arabian, Persian, Gangetic 7.5

*Arrian, Anabasis Alexandri, first half second century*
Megale Thalassa = Indian Ocean 5.4.1
Erythra Thalassa = Persian Gulf 7.16.2

*Arrian, Indika, first half second century*
Erythra Thalassa = Persian Gulf 19.9

*Pausanias, Antonine*
Erythra Thalassa = Red Sea 1.33.4

*Pseudo-Lucian, second half second century*
Erythra Thalassa = Persian Gulf *Octogenarians* 16

*Aelian, De Natura Animalium, late second-early third century*
Indian Thalatta = Indian Ocean 8.7
Erythra Thalatta = Persian Gulf 11.9
Indian Thalatta = Indian Ocean 16.8

*Philostratus, Life of Apollonius of Tyana, early third century*
Erythra = Indian Ocean 3.20
Erythra Thalassa = Indian Ocean (?) 3.35

*Dio Cassius, first third third century*
Erythra Thalassa = Persian Gulf epitome 68.28.3

## *Latin Sources*

*Ovid, Epistulae ex Ponto, Augustan*
Indian Waters = Indian Ocean 1.5.80

*Tibullus, Augustan*
Rubrum Mare= Indian Ocean 3.8.17-20 = 4.2.17-20

*Pomponius Mela, De Situ Orbis, c. 43/44 A. D.*
Indian Ocean, Arabian Sea, Persian Sea = Indian Ocean, Arabian Gulf, Persian Gulf 1.2.9
Indian Sea = Indian Ocean (?) 1.2.11
Indian Ocean = Indian Ocean 3.7.61
Greeks call Rubrum Mare Erythra Thalassa and it has two gulfs, the Persian and the Arabian 3.8.72
Persian Gulf = Persian Gulf 3.8.73
Arabian Gulf = Red Sea (?) 3.8.74
Red Sea associated with Arabian Gulf (?) 3.8.81

*Seneca, Naturales Quaestiones, Neronian*
Indian Sea = Indian Ocean (?) 4A.2.3-4

*Seneca, Tragedies, Neronian*
Indian Ocean = Indian Ocean (?) *Hippolytus, or Phaedra* 391-392

*Pliny, Natural History, Flavian*
Rubrum Mare = Red Sea 5.12.65
Rubrum Mare = Red Sea 6.26.106
Rubrum Mare divided into Arabian and Persian Gulfs 6.28.107–108
Indian Ocean = Indian Ocean 9.12.35; 9.54.106
Persian Gulf of Rubrum Mare 9.54.106
Rubrum Mare and Indian Ocean = Red Sea and Indian Ocean (?) 14.5.52
Rubrum Mare = Persian Gulf 16.80.221

*ILS II. 5834; 5845a, A.D. 106-114*
Rubrum Mare = Red Sea

## *Greek and Latin Sources whose use of Erythra Thalassa and Rubrum Mare have uncertain Designations*

*Theophrastus, Enquiry into Plants, fourth-third century B.C.*
Erythra Thalatta 1.4.2

*Diodorus Siculus, The Library of History, 56-36 B.C.*
Erythra Thalatta 1.55.2
Erythra Thalatta 3.38.1
Erythra Thalassa 17.108.4
Erythra Thalassa 40.4.1

*Josephus, Jewish Antiquities, Flavian*
Erythra Thalassa 15.317

*Dionysus Periegetes, De Situ Orbis, Domitianic-Hadrianic*
Persikon, Arabion, Hyrkanion Gulfs 631-632

Erythra 893
Arabian Gulf 924
Persian and Arabian Seas 929

*Arrian, Anabasis Alexandri, first half second century*
Erythra Thalassa 3.11.5

*Aristides, Panathenaic Oration, mid second century*
Erythra Thalatta 119

*Lucian, second half second century*
Erythra Thalassa *Dialogues of the Sea Gods* 325

*Aelian, De Natura Animalium, late second-early third century*
Erythra Thalatta 3.18; 3.28; 4.28
Erythra Thalatta 10.13; 10.20; 11.21; 11.23
Erythra Thalatta 17.1; 17.6; 17.8

*Athenaeus, The Deipnosophistae, c. A.D. 200*
Erythra Thalassa 7.322; 15.675

*Philostratus, Life of Apollonius of Tyana, early third century*
Erythra Thalatta 2.2; Erythra Thalassa 3.4
Erythra Thalatta 3.50
Erythra 6.16
Ethiopian Ocean 6.25

*Dio Cassius, first third third century*
Erythra Thalassa 51.7.1
Erythra Thalassa 76.14.3 epitome

*Cicero, De Natura Deorum, c. 45 B.C.*
Rubrum Mare 1.35.97

*Propertius, Elegies, Augustan*
Rubrum Mare 3.13.5-6

*Tibullus, Augustan*
Erythraean Shore 3.3.17-18

*Horace, Odes, Augustan*
Rubrum Oceanum 1.35.30-32

*Livy, Augustan*
Rubrum Mare 36.17.14-16
Rubrum Mare 42.52.14

*Pomponius Mela, De Situ Orbis, c. 43/44 A. D.*
Rubrum Mare 1.10.61

*Seneca, Naturales Quaestiones, Neronian*
Rubrum Mare 3 praef. 10

*Seneca, Tragedies, Neronian*
Rubrum Litus *Thyestes* 371-372
Rubrum Pelagus *Hercules Oetaeus* 658-662

*Pliny, Natural History, Flavian*
Rubrum Mare 9.56.113

*Statius, Thebaid, late first century*
Rubrae Tethyos 4.387-388
Erythraean Shores 7.566

*Valerius Flaccus, Argonautica, Flavian*
Rubrum (Mare) 5.77

*Tacitus, Annals, early second century*
Rubrum Mare 2.61

*Tacitus, Agricola, early second century*
Rubrum Mare 12

*Florus, Epitome of Roman History, Hadrianic or period of M. Aurelius*
Rubrum (Mare) 1.40.31

## APPENDIX B

# THE DATE OF THE *PERIPLUS MARIS ERYTHRAEI*

The *Periplus Maris Erythraei* (*Periplus* or *PME*) is an anonymous account of navigation and commerce in the Red Sea, Indian Ocean and Persian Gulf in the Roman Period. It is generally believed to have been written by a merchant, sailor or sea captain who frequently visited the ports of Rome's Erythraean Sea trade. Controversy has surrounded the dating of this document for over a century.[1]

Scholars have focused on five basic arguments to date the *PME.* Some have attempted to date the *Periplus* on the basis of a passage in chapter 19:

> There is a road to Petra to Malikhos, king of the Nabataeans.[2]

Many believe Malikhos to be the Nabataean monarch Malichus II (A.D. 39/40-71/71) and, accordingly, date the *Periplus* to his reign. Others believe "Malikhos" to be Malichus III of Nabataea. This identification, however, is very suspect as no evidence as yet has come to light, nor indeed is it likely, to confirm the existence of a Malichus III. "Malikhos," in fact, could be a Greek transliteration of the semitic MLK which simply means "king."[3] If so, *Malikhan*, *Basilea* would be tautologous, the author of the *Periplus* misunderstanding Malikhos as a proper name rather than a title. If this is the case, we could date the *PME* to any period of Nabataean rule prior to Roman annexation of the kingdom in A.D. 106.

Other attempts to date the *Periplus* have centered on a passage in chapter 19 which discusses a *hekatontarches* (centurion), a garrison and a tax collector at the Nabataean port of Leuke Kome. Some have seen these individuals as Nabataeans, others as Romans, but as we saw in chapter 4 nothing more than tentative conclusions can be drawn about the "nationality" of these men. We learn nothing about the date of the *Periplus* from this passage.[4]

In 1981 N. Groom revived the theory of a second or early third century date for the *Periplus* based upon a comparison of the geographical knowledge contained therein with the *Geography* of Claudius Ptolemy (*c.* A.D. 90-168).[5]

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[1] M. G. Raschke (1978):663ff, 979-980, nn. 1342-1343 summarizes the views of scholars; P. M. Fraser (1972):150, 174 discusses the *Periplus* and vol. 2:293-294, nn. 326-328 cites additional bibliography missed by Raschke; see also Giangrande (1975):293-296; G. Giangrande (1976):154-157; and L. P. Kirwan (1981):80-85 for a review of G. W. Huntingford (1980).

[2] δι' ἧς ὁδός ἐστιν εἰς Πέτραν πρὸς Μαλίχαν, Βασιλέα Ναβαταίων.

[3] See M. Rodinson (1974-1975):212ff.

[4] See also Rodinson (1974-1975):213-214.

[5] N. Groom (1981):88-95.

Groom notes that the *PME* contains a more accurate description of the east coast of Africa than does Ptolemy and concludes that the *PME* must post-date Ptolemy. Groom does concede, however, that Ptolemy's description of India is more accurate than that of the *Periplus*. On this basis, we could conceivably date the *Periplus* before Ptolemy. Obviously, we cannot date the *PME* by comparing its accuracy with the *Geography* of Ptolemy.

A fourth method for dating the Periplus, which has recently gained a certain popularity, uses the dates of Indian, Axumite and South Arabian monarchs mentioned in the *Periplus* to date the *Periplus* itself.[6] Unfortunately, the chronology or the Indian and Axumite monarchs mentioned in the *PME* is very insecure and the name of the South Arabian monarch mentioned (Charibael, Elisar or Eleazus), which is in itself a questionable reading of the MSS, was borne by several kings from that region as we saw in chapter 5. Thus the names and chronologies of foreign rulers mentioned in the *Periplus* cannot be used safely to date this document.

To reconcile the seemingly conflicting chronological data contained in the *Periplus*, J.A.B. Palmer proposed that the document was a compilation of observations from different periods.[7] However, the language and style of the *Periplus* suggest that it had a single author.[8]

G. Mathew contended that the *PME* may be an official Roman government document of the time of Trajan, but before the 106 annexation of Nabataea by Rome.[9] This seems doubtful as the *Periplus* hardly contains language commensurate with that found in an official Roman government document.

Despite the extensive number of publications dealing with the date of the *Periplus*, literature continues to appear. J. I. Miller is to publish a new translation and commentary.[10] G.W.B. Huntingford has published a new translation and extensive commentary.[11] Sir Laurence Kirwan has once again revived the second or early third century date for the *Periplus*[12] and L. Casson is also working on a translation and commentary of this document.

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[6] Summarized by Rodinson (1974-1975):216ff.
[7] J. A. B. Palmer (1947):140.
[8] Fraser (1972): vol. 2, 294, n. 328.
[9] G. Mathew (1970):29-31.
[10] Fraser (1972): vol. 2, 293, n. 326.
[11] Huntingford (1980).
[12] L. Kirwan (1979):1-9.

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